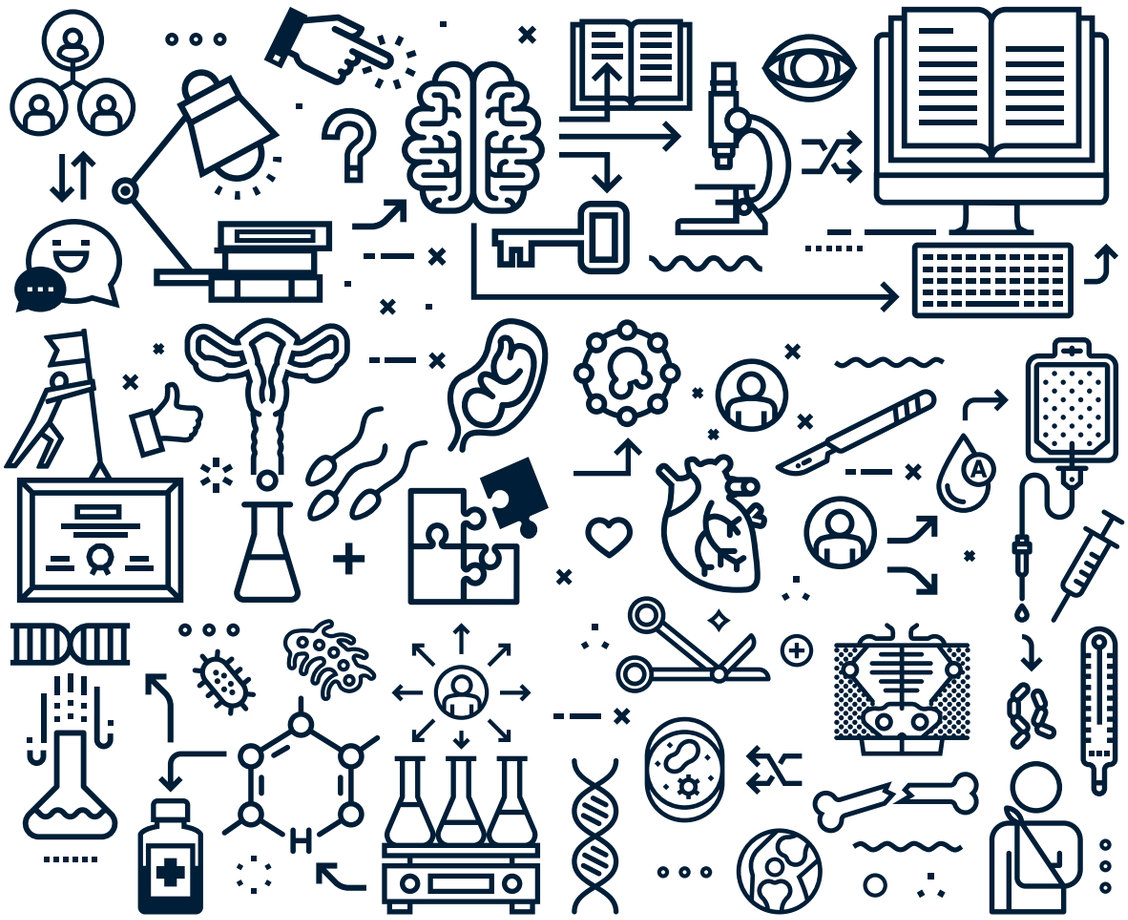


ABSTRACTBOG

Forskningssymposium

En portefølje af sundhedsfaglig forskning og udvikling ved Regionshospital Nordjylland

4. november 2021

CKF | CENTER FOR KLINISK FORSKNING Regionshospital Nordjylland
AALBORG UNIVERSITET
REGIONSHOSPITAL NORDJYLLAND – i gode hænder

Indholdfortegnelse

Forord

Det er med stor fornøjelse, at der bydes velkommen til det årlige forskningssymposium ved Regionshospital Nordjylland. Det er femte gang, at forsknings- og udviklingsprojekter på hospitalet bliver præsenteret i forbindelse med afholdelse af et årligt symposium, siden dette koncept blev introduceret for første gang i 2016. Fraset 2020, hvor det blev aflyst på grund af coronapandemien, har symposiet været afholdt fast hvert år.

Forskningssymposiet har i det store hele ikke ændret sig væsentligt i form og indhold, men derimod er det vokset i omfang. I 2016 blev der præsenteret 12 abstracts, og igennem årene er dette tal vokset stødt og roligt og topper i år med intet mindre end 65 abstracts. Og som det fremgår af abstractbogen, tager de mange præsenterede forsknings- og udviklingsprojekter afsæt i en bred vifte af forskellige faggrupper og kliniske specialer.

Flere abstracts relaterer sig til forskningskurset ved regionshospitalet, der i år blev afholdt på for 3. gang. Det har igen i år været en stor glæde at opleve, hvorledes kursisterne har udviklet deres faglige kunnen og kompetencer i forløbet af de fem kursusmoduler fra forår til efterår, og at disse slutteligt kan præsentere så fine abstracts og posters.

Som det fremgår af abstractbogen, har der været rigtig mange fine abstracts, hvorfor det har det været en ganske vanskelig opgave at udvælge de abstracts, der bliver præsenteret på dagen for symposiet som henholdsvis orale og posterpræsentationer. I abstractbogen er de mange flotte posters også at finde, men disse kan ligeledes opleves og studeres nærmere i glasgangen, hvor posterudstillingen er placeret.

På vegne af arbejdsgruppen vil jeg gerne benytte lejligheden til at takke en lille gruppe af personer, som har taget et større slæb i forhold til planlægning og afholdelse af forskningssymposiet, særligt i forhold til koordinering af det store antal indsendte abstracts samt redigering og opsætning af abstractbogen. Særligt at fremhæve er grafisk konsulent Mette Henriksen og kollegaer i Grafisk Team i Regionshuset, og ligeledes Charlotte Rahbek, Line Elise Møller Hansen og Lotte Moss Kvist i sekretariatet ved Center for Klinisk Forskning på Regionshospital Nordjylland.

Lad forskningssymposiet igen i år blive en spændende og festlig dag, og samtidig en anledning til at anerkende de mange dygtige og talentfulde mennesker, som bidrager til at fremme et fagligt stærkt forsknings- og udviklingsmiljø på regionshospitalet.

Peter Leutscher, Professor
Center for Klinisk Forskning, Regionshospital Nordjylland &
Klinisk Institut, Aalborg Universitet

Program
Regionshospital Nordjyllands Forskningssymposium 2021

Torsdag den 4. november 2021 – Skou Auditoriet

12.00-12.45 **Posterpræsentation**
Symposiet starter i Glasgangen, hvor det er muligt at studere postere og tale med forskerne

12.45-13.00 **Pause**
Alle deltagere bevæger sig over i Skou Auditoriet

13.00-13.10 **Velkomst v/professor, overlæge Peter Leutscher**
Center for Klinisk Forskning, RHN

13.10-13.25 **Velkomst v/forskningschef Egon Toft**
Aalborg Universitetshospital

13.25-13.55 **Orale præsentationer del 1, moderator Mona Kyndi Pedersen**
Patient-reported efficacy and safety of cannabis-based medicine among patients with refractory chronic pain
v/Karoline Lichon Hesthaven, Center for Klinisk Forskning, RHN

Hvilken viden, drivkraft og relationer behøver unge med Type 1 diabetes for at bedre deres sundhedskompetencer – et kvalitativt studie
v/Margit Oien Nielsen, Diætistenheden, RHN

BCI-STAR Project: Brain computer Interface for upper limb rehabilitation following stroke
v/Benjamin Svejgaard, Neuroenhed Nord, RHN & Neurologisk Afdeling AAUH

13.55-14.15 **Pause**

14.15-14.45 **Orale præsentationer del 2, moderator Mona Kyndi Pedersen**
Association between intravenous iron therapy and short-term mortality risk in older patients undergoing hip fracture surgery - an observational study
v/Silas Zacharias Clemmensen, Center for Klinisk Forskning, RHN

Metabolic changes in the healthy human heart during adenosine stress test
v/Steen Hyldgaard Jørgensen, Kardiologisk afdeling & Center for Klinisk Forskning, RHN

Efficacy of FODMAP elimination and subsequent blinded placebo-controlled provocations in patients with ulcerative colitis and comorbid symptoms of irritable bowel syndrome - a feasibility study
v/Anne Krarup, Akut- og Traumecenter, AAUH & Center for Klinisk Forskning, RHN

14.45-15.00 **Pause**

15.00-15.35 **Virtuel posterpræsentation, moderator Dorte Melgaard**
Impact of low-dose dronabinol therapy on cognitive function in cancer patients receiving palliative care – a case-series intervention study
v/Ditte Buchwald, Center for Klinisk Forskning, RHN

Patients' experiences eating in a hospital – a qualitative study
v/Karen Lyng Larsen, Kvalitet og Patientsikkerhed, RHN

The Incidence of eosinophilic oesophagitis among children in the North Denmark Region between 2007-2017 is lower than expected and treatment does not live up to international guidelines
v/Kasper Bredal, Institut for Medicin og Sundhedsteknologi, AAU & Center for Klinisk Forskning, RHN

Validation of cervical lesion proportion measure using a gridded imaging technique to assess cervical pathology in women with genital schistosomiasis
v/Louise Arenholt, Afdeling for Gynækologi, Graviditet og Fødsel & Center for Klinisk Forskning, RHN

The urinary, vaginal and gut microbiota in women with genital lichen sclerosus: a case-control study
v/Sofie Nygaard, Center for Klinisk Forskning, RHN

Rectal shedding of SARS-CoV-2 in Danish COVID-19 patients and the general population
v/Suzette Sørensen, Center for Klinisk Forskning, RHN

Primiparas versus multiparas after early discharge regarding breastfeeding, anxiety, and insecurity - a prospective cohort study
v/Victoria Lindblad, Afdeling for Gynækologi, Graviditet og Fødsel, RHN

Tube size and patients' experiences of postoperative sore throat and hoarseness - a randomised controlled blinded study
v/Caroline Hornes, Anæstesi- og Intensivafdeling, RHN

15.35-16.00 **Uddeling af priser og afslutning**
Herunder uddeling af Kvalitetsprisen

Akut Medicin og Anæstesiologi

1

Regional quality assuring in delivery room emergencies

Mette Malene Motzfeldt Jensen[1], Anne-Cathrine Finnemann Viuff[1,2], Mette Line Roed[1,3,4]

1. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
2. Department of Pediatrics, Aalborg University Hospital, Aalborg, Denmark
3. Department of Pediatrics, North Denmark Regional Hospital, Hjoerring, Denmark
4. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark

Background
Delivery room emergencies require urgent care and is often unexpected. When an emergency in the delivery room is occurring, pediatricians, anesthesiologists and nurses are called to the delivery room to perform critical care. It requires close collaboration with the obstetricians who often is the primary identifier of the high-risk deliveries. When a high-risk delivery is identified, a neonatal assistance team should be called in time, so the process can be planned and prepared with the necessary equipment, however, accuracy in determining whether it is an emergency is also important, because the neonatal resuscitation team often can be pulled away from other important duties.

This study will make account for all delivery room emergencies in Aalborg University Hospital and North Denmark Regional Hospital Hjoerring in the period 1st of January 2020 - 2021 and 1st of January 2015 -2021, respectively. The aim is to investigate which diagnoses causes the emergency and to ensure that the emergency calls are made with fair accuracy in order to ensure that the children receive the best possible treatment.

Methods
This quality assurance project will be performed as a registry study with comparative analyses of the neonatal emergency calls and the following treatment in Aalborg University Hospital and North Denmark Regional Hospital. Data will be found in medical records of the children and their mother. The data will be registered in REDcap.

Results
None yet.

Conclusion
Final findings will hopefully be presented at the symposium.

Delivery room emergencies in the North Denmark Region
A quality assurance project

Mette Malene Motzfeldt Jensen[1], Anne-Cathrine Finnemann Viuff[1,2], Mette Line Roed[1,3,4]

1. Department of Clinical Medicine, Aalborg University, Denmark
2. Department of Pediatrics, Aalborg University Hospital, Denmark
3. Department of Pediatrics, North Denmark Regional Hospital, Hjoerring, Denmark
4. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark

Background

Dramatic cardiopulmonary changes occur as the infant adapts from uterine to extrauterine life. In most deliveries, this process occurs without complications, however, 10 % of newborns require care such as stimulation and 1 % of newborns require urgent resuscitation. [1,2] According to the American Heart Association guidelines, the majority of neonates who require resuscitation can be identified before birth, due to calculation of risk factors, so the process can be planned and prepared with the necessary equipment.[3] However, accuracy in determining whether it is an emergency is also important, because the neonatal resuscitation team often can be pulled away from other important duties. A Canadian study found a rate of resuscitation team attendance to be over half of all deliveries due to risk assessment.[4]

Aim

The aim of this study is to investigate all deliveries with a delivery room emergency call in North Denmark Regional Hospital, Hjoerring and Aalborg University Hospital in a comparable period of time, in relation to the number of births in the two hospitals. It will be investigated which diagnoses cause the delivery room emergency calls, the approach to the neonate in the emergency room and the following treatment. The purpose of this study is to ensure that the emergency calls are made with fair accuracy in order to ensure that the children receive the best possible treatment.

Methods

This quality assurance project will be performed as a registry study with comparative analyses of the neonatal emergency calls and the following treatment in North Denmark Regional Hospital and Aalborg University Hospital. This will be achieved by investigating delivery room emergency calls in North Denmark Regional Hospital, Hjoerring in the period 1st of January 2015 to 1st of April 2021 and Aalborg University Hospital in the period 1st of January 2020 to 1st of August 2021. The period of investigation is longer in Hjoerring in order to secure that the population size is compatible, as there is about a three times higher population of births in Aalborg University Hospital compared to the North Denmark Regional Hospital, Hjoerring. Additionally, the hospitals attend to different patient groups, as one is a regional hospital, and the other a university hospital where all the high-risk deliveries in the region are transferred to. In order to make the populations from the different hospitals more compatible, inclusion and exclusion criteria are made.

Data will be found in medical records of the children and their mothers. The data will be registered in REDCap, Research Electronic Data Capture.[5] Data includes time of birth, gestational age, length, weight and head circumference, whether the child is born by vaginal birth or caesarean delivery, triggering causes for the call such as shoulder dystocia, meconium aspiration syndrome, asphyxia, low apgar scores and maternal and obstetrical risk factors such as hypertension, diabetes, obesity, prolonged labor, initiation of labor, medication or other exposures during pregnancy. Additionally, it will be noted whether the child is hospitalized or not, or transferred to Aalborg University Hospital for treatment, and which treatment is given.

A systematic literature search is performed in order to compare our protocols of the emergency calls with the literature. On Pubmed, MESH terms “birth”, “neonatal” and “delivery room” was searched with MESH terms “resuscitation” and “emergency”. The search resulted in 13546 articles. After application of filters including language (English and Danish), species (humans), age (infants), publication dates (10 years back) and article type (Meta-analyses, systematic reviews, reviews, randomized-controlled trials) there were 840 results of which the headlines and abstracts were evaluated for relevance to this study.

Results

In the period investigated, there were a total of 8715 births in North Denmark Regional Hospital, Hjoerring. 207 of the births triggered a delivery room emergency call.
In Aalborg University Hospital, there were a total of 5380 births in the period investigated. There were 10 delivery room emergency calls.

Conclusions

Final findings will hopefully be presented at the symposium.

1. Lapcharoensap W, Lee HC. Tackling Quality Improvement in the Delivery Room. *Clin Perinatol*. 2017;44(3):663-681. doi:10.1016/j.clp.2017.05.003
2. Katheria AC, Rich WD, Lakshminrusimha S. Circulatory emergencies in the delivery room. *Semin Fetal Neonatal Med*. 2019;24(6):101030. doi:10.1016/j.siny.2019.101030
3. Kattwinkel J, Perlman JM, Aziz K, et al. Part 15: Neonatal resuscitation: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*. 2010;122(SUPPL. 3). doi:10.1161/CIRCULATIONAHA.110.971119
4. Aziz K, Chadwick M, Baker M, Andrews W. Ante- and intra-partum factors that predict increased need for neonatal resuscitation. *Resuscitation*. 2008;79(3):444-452. doi:10.1016/j.resuscitation.2008.08.004
5. REDCap. https://www.project-redcap.org. Published 2004. Accessed October 3, 2021.

2

Tube size and patients' experiences of postoperative sore throat and hoarseness - A randomised controlled blinded study

Pia Christiansen[1], Caroline H. Pedersen[1], Hansbjørg Selter[1], Lillian Odder[1], Jette P. Riisager[2], Kjeld Damgaard[2,3], Signe Westmark[4], Niels Henrik Bruun[5], Dorte Melgaard[3,4]

1. Clinic for Anaesthesiology, Aalborg University Hospital, Thisted, Denmark
2. Clinic for Anaesthesiology, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
4. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
5. Unit of Clinical Biostatistics and Epidemiology, Aalborg University Hospital, Aalborg, Denmark

Background
It is well-known that sore throat and hoarseness is a common complaint after tracheal intubation. The aim of the present study was to investigate whether tube size impacts on the experiences of sore throat and hoarseness after tracheal intubation in patients undergoing elective surgery as well as to document a possible role of gender.

Method
This randomised controlled blinded study was conducted from January 2019 to November 2020 at Aalborg University Hospital, Thisted, Denmark or North Denmark Regional Hospital, Hjoerring, Denmark (Clinicaltrial.gov NCT04184778). A total of 236 patients (53.4% female, mean age 50.9 years (SD 14.0)) patients were enrolled from departments of gynaecology, parenchyma and orthopaedics. The patients were randomized to standard tube size 8.0 for male and 7.0 for female or size 7.0 for male and 6.0 for female. Tube sizes were known to the anaesthesia staff but patients, researchers and staff at the Postoperative care unit were blinded to tube size. Sore throat and/or hoarseness was reported 30-60 minutes before anaesthesia, at 30 minutes and at 2, 5, 12, 24, 48, 72 and 96 hours after anaesthesia.

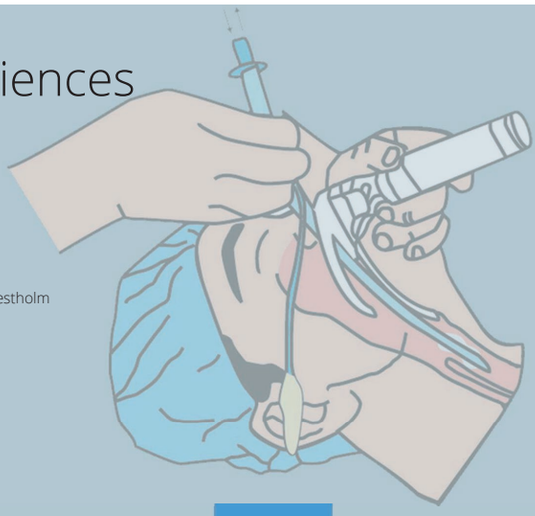
Results
Female intubated with a tube size 6.0 versus size 7.0 and male intubated with a tube size 7.0 versus 8.0 experienced significantly lower levels of sore throat and hoarseness after intubation.

Conclusion
The conclusion of this study was that a smaller size of TT result in more comfort for both male and female in having score throat or hoarseness after surgery. Studies are needed to document the effects of using an even smaller tube size.

Tube size and patients' experiences of postoperative sore throat and hoarseness

- A randomised controlled blinded study

Pia Christiansen[1] • Caroline Hornnes Pedersen[1] • Hansjörg Selter[1] • Lillian Odder[1] • Jette Præstholm Riisager[2] • Kjeld Damgaard[2,3] • Signe Westmark[4] • Niels Henrik Bruun[5] • Dorte Melgaard[3,4]
1 Clinic of Anaesthesia, Aalborg University Hospital – Thisted, Denmark
2 Clinic of Anaesthesia, North Denmark Regional Hospital, Hjørring, Denmark
3 Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
4 Centre for Clinical Research, North Denmark Regional Hospital, Hjørring, Denmark
5 Unit of Clinical Biostatistics and Epidemiology, Aalborg University Hospital, Aalborg, Denmark



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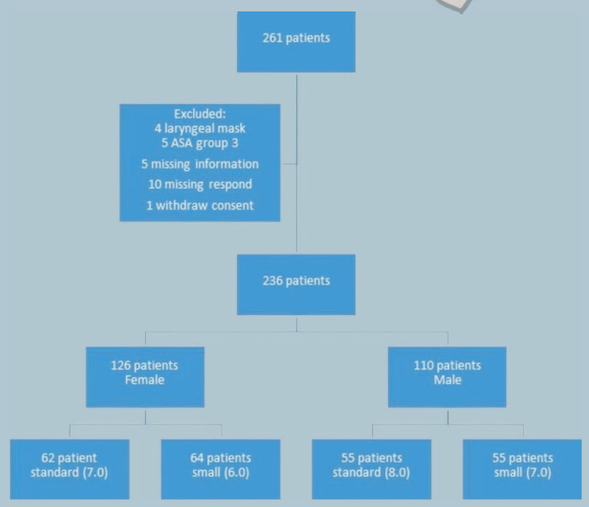
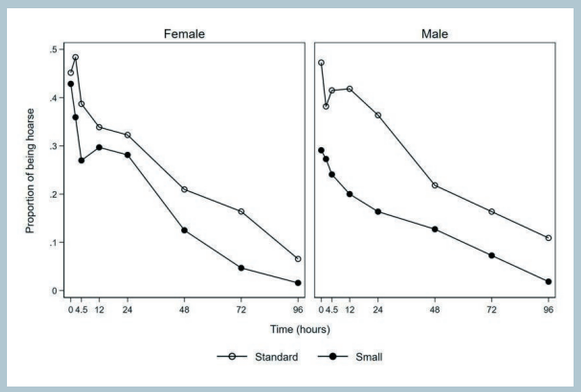
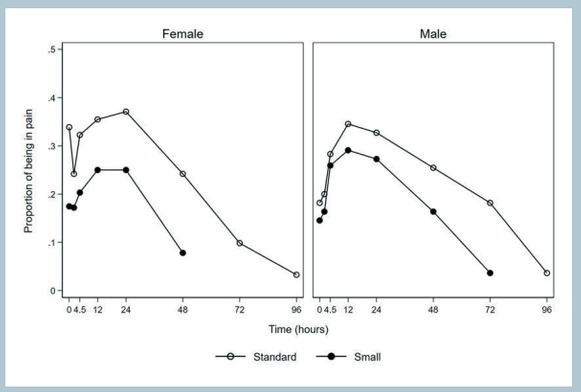






Results

Female intubated with a tube size 6.0 versus size 7.0 and male intubated with a tube size 7.0 versus 8.0 experienced significantly lower levels of sore throat and hoarseness after intubation.

Conclusion

The conclusion of this study was that a smaller size of TT result in more comfort for both male and female in having score throat or hoarseness after surgery. Studies are needed to document the effects of using an even smaller tube size.

AALBORG UNIVERSITY HOSPITAL
CKF CENTER FOR KLINISK FORSKNING Regionshospital Nordjylland
NORTH DENMARK REGIONAL HOSPITAL

Bevægeapparatet

3

Patients with severe gout treated in mixed settings: a cohort study

Claus Rasmussen[1], Monica Bak Larsen[1], Asta Linauskas[1]

1. Department of Rheumatology, North Denmark Regional Hospital, Hjoerring, Denmark

Objectives
We aimed to investigate whether patients with a definite gout diagnosis who were treated in real-life mixed settings (various hospital departments or general practice) followed treatment recommendations.

Methods
We included all patients in the hospital's uptake area 2015-2017 diagnosed with gout after microscopy findings of urate crystals. Data regarding comorbidities and indications for urate-lowering therapy (ULT) were collected. Criteria for treatment success was a p-urate level < 0.36 mmol/L (< 6 mg/dL) or < 0.30 mmol/L (< 5 mg/dL) if tophi were present. All patients were followed up for 24 months.

Results
The study included 100 patients with a median age of 70 years, and 82% of patients were males. An indication for ULT was present in 99 patients and initiated in 79 patients. Fourteen of these 99 patients died within 1 year. For the remaining 85 patients, p-urate was measured, and the target was reached by 22 (26%) patients, not reached by 33 (39%) patients, and not measured in 30 (35%) patients. Treatment success was positively associated with a written plan for treatment in the rheumatology record after microscopy, initiation of ULT, provision of a gout leaflet, higher number of outpatient visits and non-smoking status.

Conclusion
Many patients with crystal-proven gout did not receive ULT as recommended. Also, even if the p-urate level was not frequently monitored, the dose of ULT was not escalated when necessary. The best outcomes were associated with continued care in a rheumatology clinic.

Patients with severe gout treated in real-life mixed settings: a two-year cohort-study.

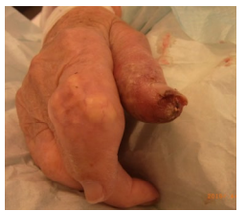
Larsen MB, Rasmussen C.
Department of Rheumatology, North Denmark Regional Hospital, Hjørring, Denmark
Contact: clara@rn.dk

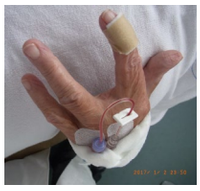
Objectives

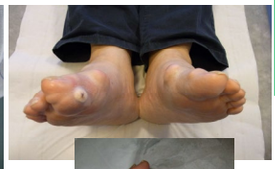
We aimed to investigate whether patients with a definite gout diagnosis who were treated in real-life mixed settings (various hospital departments or general practice) followed treatment recommendations.

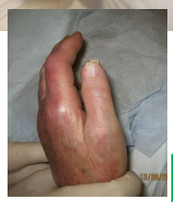
Methods

We included all patients in the hospital's uptake area 2015-2017 diagnosed with gout after microscopy findings of urate crystals (Figure 1). Data regarding comorbidities and indications for urate lowering therapy (ULT) were collected (Table 1). Criteria for treatment success was p-urate monitored and reached <0.36 mmol/l (<6 mg/dL) or <0.30 mmol/l (<5 mg/dL) if tophi were present. All patients were followed up for 24 months.









Patients examined in the clinic.

Results

The study included 100 patients with a median age of 70 years, and 82% were males. Indication for ULT was present in 99 patients and initiated in 79. Fourteen of these 99 patients died within one year. For the remaining 85 patients, p-urate was measured, and the target was reached by 22 (26%), not reached by 33 (39%), and not measured in 30 (35%) (Figure 2). Treatment success was positively associated with a written plan for treatment in the rheumatology record after microscopy, initiation of ULT, provision of a gout leaflet, a higher number of outpatient visits and non-smoking status.

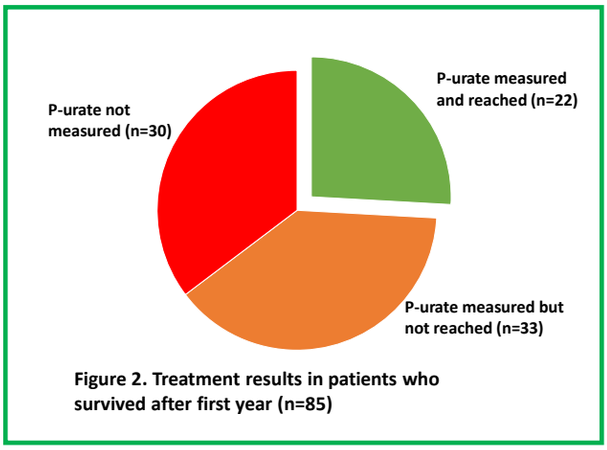


Figure 2. Treatment results in patients who survived after first year (n=85)

Conclusions

Many patients with crystal proven gout do not receive ULT treatment as recommended, and even if so, the p-urate is frequently not monitored, and the dose of ULT not escalated when necessary. The best outcome was associated to continued care in a rheumatology clinic.

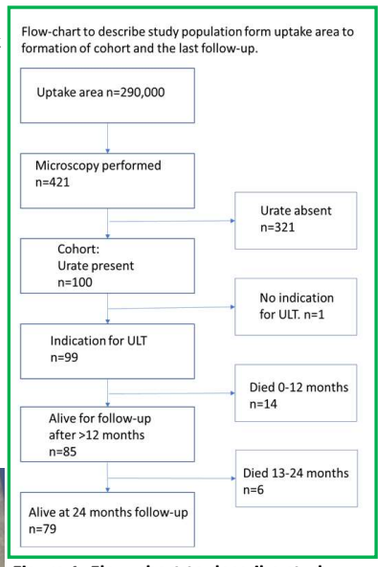


Figure 1. Flow-chart to describe study population from uptake area to formation of cohort and the last follow-up.

Table 1. Baseline characteristics: Status at the time of gout diagnosis with crystal detection by microscopy.

Variable	Baseline
Number of patients, n	100
Males/females, n	82/18
Age years median (range)	70 (20–98)
eGFR ml/min median (range)	63 (14–121) Missing n = 3
p-urate median (range)	0.54 (0.33–0.98) mmol/L 8.7 (5.5–16.3) mg/dL Missing n = 2
Tophi yes/no, n	32/68
Smoking yes/no/missing, n	14/73/13
Alcohol >6 units/week yes/no/missing, n	35/40/25
No comorbidity related to gout* (EULAR, 2016), n	5
Hypertension, n	67
eGFR <60 ml/min, n	39
Atrial fibrillation, n	26
Any heart disease, n	49
Diabetes, n	16
Additional arthritis diagnosis, n	11
Additional comorbidity**, n	69
Previous ULT, n	16
Puncture site for urate crystals, n:	
Knee	48
Ankle	7
Elbow	2
Wrist	3
Toe incl. 1 MTP	13
Finger	1
Tophus (skin, tendon, joint)	24
Other	2

*** Comorbidity related to gout: hypertension, impaired kidney function, any heart disease or diabetes.**
****Additional comorbidity: long-term treatment for another chronic medical condition not related to gout, e.g., osteoporosis or obstructive lung disease.**

4

Blood flow resistance training in citizens with knee arthritis – a randomized controlled pilot trial

Lasse Flarup Lengsø[1], Dorte Melgaard[2,3]

1. Department of Elderly and Health, Section of Training and Activity, Aalborg, Denmark
2. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
Citizens diagnosed with arthritis in the knee(s) is often referred to physiotherapeutic rehabilitation in the municipal. Typical rehabilitation consists of Neuromuscular Training (NT) and functional training. A small group of citizens with arthritis cannot participate in NT due to an increase in pain and swelling in the knee(s). Recent studies have shown a potential in using blood flow resistance (BFR) in rehabilitation of patients with knee arthritis. BFR allows for training with lower resistance than NT thus reducing the workload of the joint thereby reducing pain and swelling.

The aim of this study is to compare the effects of BFR vs. NT on pain, swelling and function after one month of training in patients with severe knee arthritis.

Methods
Twenty citizens with knee arthritis randomized in two groups of ten subject over a period of three months are included.

Pain-VAS, EQ-5D-5L, 6 min walk and Knee injury and Osteoarthritis Outcome Score collected at baseline and 4-week follow up.

The two groups performed the same exercises but with different resistance. The NT-group trained 3 sets of 15 repetitions at 60% of 1RM. The BFR-group trained at a lower resistance, first set with 30 repetitions followed by 3 sets of 15 repetitions at 30% of 1RM. The two groups trained twice a week over a 4-week period.

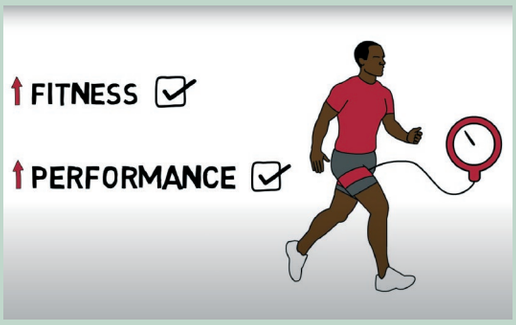
Results
Currently collected.

Conclusion
Depending on results the use of BFR in rehabilitation allow for a rapidly increase in daily activities thereby reducing the length of the rehabilitation courses.

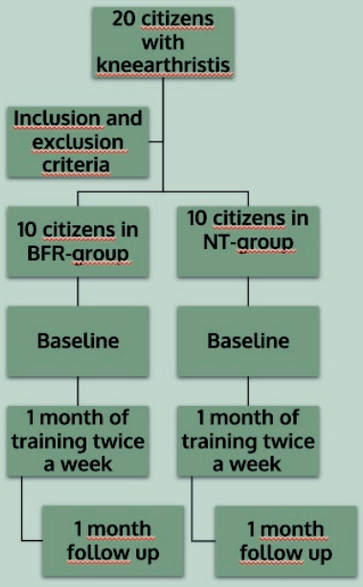
BLOOD FLOW RESISTANCE TRAINING IN CITIZENS WITH KNEE ARTHRITIS – A RANDOMIZED CONTROLLED PILOT TRIAL

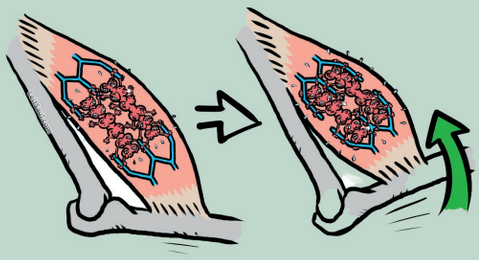
LASSE F. LENGSOE[1], DORTE MELGAARD[2]
1) DEPARTMENT OF ELDERLY AND HEALTH, SECTION OF TRAINING AND ACTIVITY, AALBORG MUNICIPALITY, AALBORG, DENMARK
2) DEPARTMENT OF CLINICAL MEDICINE AND CENTRE FOR CLINICAL RESEARCH, AALBORG UNIVERSITY AND NORTH DENMARK REGIONAL HOSPITAL, HJOERRING, DENMARK

BACKGROUND:
CITIZENS DIAGNOSED WITH ARTHRITIS IN THE KNEE(S) IS OFTEN REFERRED TO PHYSIOTHERAPEUTIC REHABILITATION IN THE MUNICIPAL. TYPICAL REHABILITATION CONSIST OF NEUROMUSCULAR TRAINING (NT) AND FUNCTIONAL TRAINING. A SMALL GROUP OF CITIZENS WITH ARTHRITIS CANNOT PARTICIPATE IN NT DUE TO AN INCREASE IN PAIN AND SWELLING IN THE KNEE(S). RECENT STUDIES HAVE SHOWN A POTENTIAL IN USING BLOOD FLOW RESISTANCE (BFR) IN REHABILITATION OF PATIENTS WITH KNEE ARTHRITIS. BFR ALLOWS FOR TRAINING WITH LOWER RESISTANCE THAN NT THUS REDUCING THE WORKLOAD OF THE JOINT THEREBY REDUCING PAIN AND SWELLING.
THE AIM OF THIS STUDY IS TO COMPARE THE EFFECTS OF BFR VS. NT ON PAIN, SWELLING AND FUNCTION AFTER ONE MONTH OF TRAINING IN PATIENTS WITH SEVERE KNEE ARTHRITIS.



METHODS:
TWENTY CITIZENS WITH KNEE ARTHRITIS RANDOMIZED IN TWO GROUPS OF TEN SUBJECT OVER A PERIOD OF THREE MONTHS ARE INCLUDED.
PAIN-VAS, EQ-5D-5L, 6 MIN WALK AND KNEE INJURY AND OSTEOARTHRITIS OUTCOME SCORE COLLECTED AT BASELINE AND 4-WEEK FOLLOW UP.
THE TWO GROUPS PERFORMED THE SAME EXERCISES BUT WITH DIFFERENT RESISTANCE. THE NT-GROUP TRAINED 3 SETS OF 15 REPETITIONS AT 60% OF 1RM. THE BFR-GROUP TRAINED AT A LOWER RESISTANCE, FIRST SET WITH 30 REPETITIONS FOLLOWED BY 3 SETS OF 15 REPETITIONS AT 30% OF 1RM. THE TWO GROUPS TRAINED TWICE A WEEK OVER A 4-WEEK PERIOD.





STATUS OF PROJECT:
CURRENTLY AWAITING FURTHER APPROVAL FROM THE NATIONAL COMMITTEE ON HEALTH RESEARCH ETHICS

EXPECTATIONS FROM TRIAL:
DEPENDING ON RESULTS THE USE OF BFR IN REHABILITATION ALLOW FOR A RAPIDLY INCREASE IN DAILY ACTIVITIES THEREBY REDUCING THE LENGTH OF THE REHABILITATION COURSES.

AALBORG MUNICIPALITY

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Hvilken effekt har moderat fysisk aktivitet på kognition hos borgere, der har apopleksi – et interventionsstudie

Malene Sulkjær[1], Dorte Melgaard[2,3]

1. Træningsenheden, Hjørring kommune, Hjørring
2. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
3. Klinisk Institut, Aalborg Universitet, Aalborg

Baggrund

Omkring 26.000 voksne og 1.500 børn indlægges hver år med en skade på hjernen som følge af en ulykke, apopleksi, infektion, hjertestop eller andet. I perioden 2011-2017 steg antallet af personer som lever med en erhvervet hjerneskade med ca. 4000 personer pr. år.

Studier viser, at der ses en sammenhæng med fysisk kondition og generelle kognitive evner målt ud fra iltoptagelsen i præfrontalt cortex efter træning samt at motion her en positiv indflydelse på kognitive præstationer.

Formålet med dette projekt er at afdække, hvorledes moderat fysisk aktivitet påvirker kognitionen hos borgere med apopleksi cerebri.

Metoder

Dette interventionsstudie gennemføres i Træningsenheden, Hjørring Kommune i perioden 1. januar 2022 til 1. september 2022. I projektet inkluderes 10 borgere ud fra følgende inklusionskriterier: 16 år+, apopleksi cerebri inden for 12 måneder, kognitive vanskeligheder i moderat grad samt henvist til ergoterapi i Hjørring kommune. Eksklusionskriterier: kendt psykisk sygdom, alkoholmisbrug, demens, Parkinsons sygdom, sklerose, epilepsi samt Alzheimers sygdom.

Deltagerne gennemfører et 12 ugers træningsforløb med træning to gange ugentligt. Hver træningsgang starter med 15 min træning, hvor der er fokus på bevægelse som udfordrer borger fysisk og kognitivt. Dernæst træning i 30 min med kognitive opgaver og fokus på specifikke opgaver, som relaterer sig til eksekutive funktioner, tænkning og hukommelse.
Det laves en AMPS-test for at få viden om motoriske og procesmæssige udfordringer og Oxford Kognitive Screen for at afdække kognitive udfordringer hos borgeren. Testene laves ved baseline samt efter 12 uger.

Resultater

Det primære effektmål er ændring i kognition målt med Oxford kognitive Screen, sekundært effektmål er funktionsevne målt med AMPS. Resultaterne danner baggrund for en kortlægning af, hvordan moderat fysisk aktivitet påvirker borgernes kognitive udfald.

Resultaterne forventes at forelægge efteråret 2022.

Perspektivering

Hvis denne interventionsform har effekt, vil den blive inddraget som et fast tilbud til borgere med apopleksi og kognitive vanskeligheder i Hjørring Kommune.

Hvilken effekt har moderat fysisk aktivitet på kognition hos borgere, der har apopleksi – et interventionsstudie

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Sundhedscenter Hjørring
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6

Custom-made foot orthoses for patients with rheumatoid arthritis: Can we predict who will benefit the most?

Morten Bilde Simonsen[1,2], Ketill Næsborg-Andersen[1], Peter Leutscher[1,2], Kim Hørslev-Petersen[3], Michael Skipper Andersen[4], Rogerio Pessoto Hirata[5], James Woodburn[6]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Danish Hospital for Rheumatic Diseases, University of Southern Denmark, Odense, Denmark
4. Department of Materials and Production, Aalborg University, Aalborg, Denmark
5. Sports science, Department of Health Science and Technology, Aalborg University, Aalborg, Denmark
6. Griffith University, Gold Coast, Australia

Background
Foot orthoses (FO) are the first-line treatment for foot pain and impairments in patients with rheumatoid arthritis (RA). However, the pain-relieving effects of FO are still controversial. Our previous studies have shown that patients have different pain-relieving effects. This study aimed to investigate potential biomechanical differences between patients with RA responding well to a custom-made FO with patients not responding in terms of pain relief.

Methods
Twenty-five participants with RA completed this quasi-experimental study using a control insole for four weeks and then a custom-made FO in the following four weeks. A visual analog scale was used to monitor changes in foot pain. 3D gait analysis was measured during walking with the control insole and the custom-made FO, respectively. Responders were defined as participants with a foot pain intensity relief larger than 20mm on a VAS scale. No-responders was defined as participants with a foot pain intensity relief smaller than 20mm.

Results
The responder group (n=8) had a pain relief of -40.1 (±13.1) mm and reduced ankle plantarflexion moment with the FO compared to the control. The no-responders (n=15) had a pain relief of -4.3 (±4.3) mm and no difference in gait mechanics between the control and the FO.

Conclusion
The present study demonstrates a paradox. Although the FO was customized to each participant's foot, it did not cause similar motion control for all participants. Participants who did not have altered gait mechanics did not achieve a clinically significant pain reduction.

Custom-made foot orthoses for patients with rheumatoid arthritis: Can we predict who will benefit the most?

*MB Simonsen[1,2], K Hørslev-Petersen[3], P Leutscher[2], and RP Hirata[1], MS Andersen[4], J Woodburn[5]

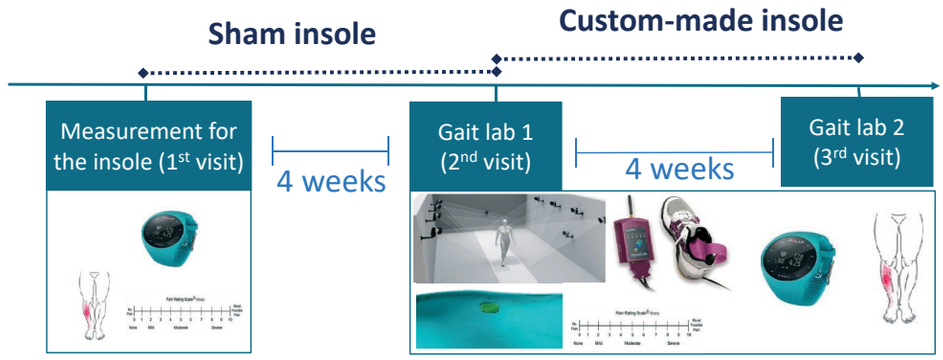
[1]SMI,Department of Health Science and Technology, Aalborg University, Denmark
[2]Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
[3] King Christian 10th Hospital for Rheumatic Diseases, Graasten, Denmark
[4]Department of Materials and Production, Aalborg University,
[5]Griffith University, Gold Coast, Australia

Morten.Simonsen@rn.dk

1 Aim

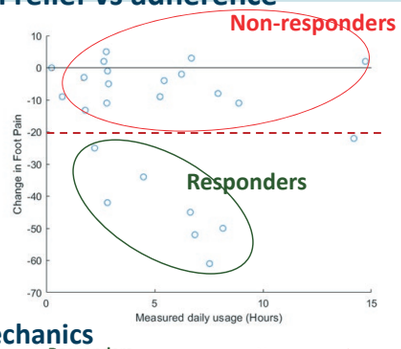
This study aimed to investigate biomechanical differences between patients with rheumatoid arthritis responding well to a custom-made insole with patients not responding in terms of pain relief.

2 Methods

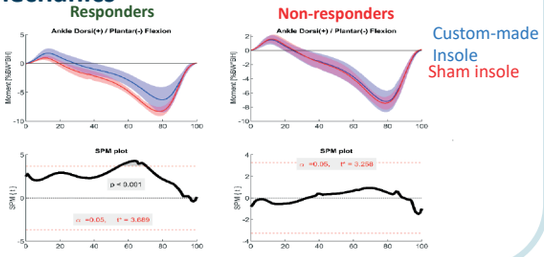


Responders = Foot pain relief larger than 20 mm on a VAS scale
Non-responders = Foot pain smaller than 20 mm on a VAS scale and a minimum of 2 hours daily use of the insole

3 Pain relief vs adherence



Gait mechanics



4 Participants with altered gait mechanics had a clinically significant pain reduction.

References

AALBORG UNIVERSITY DENMARK
NORTH DENMARK REGIONAL HOSPITAL
The Danish Rheumatism Association
TrygFonden

7

Corona virus-related restrictions' effects on female's daily activity and well-being in Denmark

Morten Bilde Simonsen[1], Dorte Melgaard[1,2]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
The present study aimed to investigate the influence of the restrictions implemented to reduce the spread of the novel 2019 coronavirus disease (COVID-19) on well-being and daily activity during two periods with different degrees of restrictions in Denmark.

Methods
An online survey was distributed in the spring (strict restrictions) and repeated six months later in the fall of 2020 (milder restrictions). The survey included a self-reported risk assessment of getting critically ill by COVID-19, well-being (WHO-5), daily steps, and the current consequences of the restrictions on daily life.

Results
A total of 97 females with a median age of 37 (IQR:29–46) answered the questionnaires for both periods. No statistical difference in well-being and daily activity (p=0.914) was observed between seasons. However, an increased number of participants (22.6%) showed signs of depression during the fall compared to the spring (14.4%). The participants with symptoms of depression were on average 36 (±7.8) years old and rated themselves at low risk of getting critically ill by COVID-19.

Conclusion
Mental health and daily activity did not change despite the restrictions being eased. The study highlights the importance of maintaining focus on well-being despite easing COVID-19 restrictions.

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2. Clinical Institute, Aalborg University, Aalborg

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7

Inflammationens indvirkning på smerter i akillessenen. Et ikke-randomiseret, ikke-kontrolleret pilotstudie

Thøger Persson Krogh[1], Sten Rasmussen[2], Gorm Danscher[3], Ulrich Fredberg[1]

1. Sportsmedicinsk Center, Regionshospital Nordjylland, Hjørring
2. Klinisk Institut, Aalborg Universitet, Aalborg
3. Berlock® Gold Implants

Baggrund
Akillessene tendinopati er en hyppig lidelse både blandt idrætsudøvere og erhvervsaktive. Det giver smerter og påvirker det daglige funktionsniveau, så folk ikke kan dyrke sport eller passe deres arbejde.

Metoder
I dette studie ønsker vi, hos patienter med betændelse i akillessenen, at undersøge inflammationens rolle ved at hæmme specifikke dele af inflammationen gennem en injektion med guldpartikler rundt om akillessenen.

Hvis en specifik hæmning af dele af inflammationen gennem guldindsprøjtning medfører smertereduktion vil det både give:

1) En ny grundviden om den grundlæggende patologi ved kroniske akillessene tendinopatier
2) En ny mulighed for behandling.

10 patienter med akillessene tendinopati inkluderes og følges i 12 måneder med både klinisk undersøgelse, spørgeskema (VISA-A score) og ultralydsskanning.

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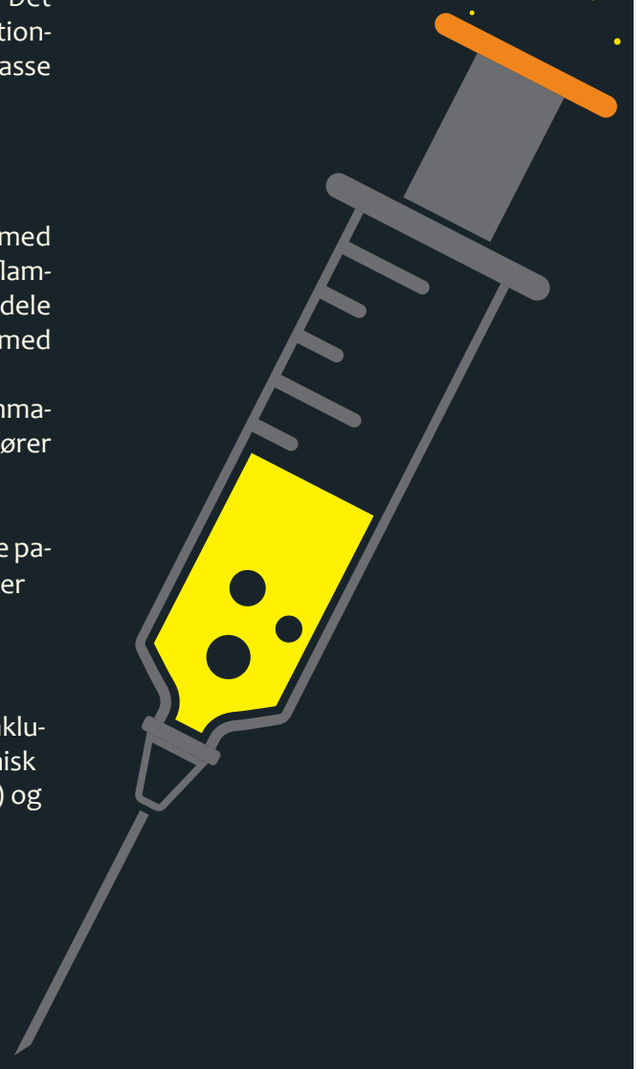

Cannabis

9

Dialogue about Cannabis – what do patients with advanced cancer ask when the opportunity is given from a healthcare professional

Ditte Buchwald[1], Karoline Hesthaven[1], Dorthe Brønnum[1,3], Dorte Melgaard[1,3], Peter Leutscher[1,3], Dorte Buchwald[2]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Unit of Palliative Care, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
Cancer patients express an increased focus on cannabis, but the physicians are reluctant to discuss cannabis as a treatment option - and to prescribe cannabis. This study aimed to collect information from patients with advanced cancer regarding which questions they would like to ask HCPs about cannabis.

Material and method
Informants were newly visited patients in the palliative care team at North Denmark Regional Hospital, who were participating in a patient assisted questionnaire survey regarding cannabis. 26 interviews were conducted, 20 never users, 4 prior users and 2 current users. During the analysis process, texts were systemized with clarification of themes and tendencies.

Results and conclusion
Four main themes emerged 1, Expectations. 2, Effect 3, Side effects and 4. Practical considerations.

All the never users expressed an expectation that the researchers' visit would lead to a prescription for cannabis: "I do not know so much about cannabis, but my children say it will be good for me – can you see to that I can start using it"? The current users did not have many questions but expressed a need to state that cannabis was the best medication ever, and everybody with symptoms should take it. "I am so glad that I started treatment with cannabis. My daughter takes it too, because she suffers from headaches".

Conclusion
Cancer patients in palliative care have great interest in asking questions about cannabis to HCPs, especially regarding expectations to the product, affect and side effects and practical considerations.

Dialogue about Cannabis
– what do patients with advanced cancer ask when the opportunity is given from a healthcare professional

Buchwald, Ditte[1], Hesthaven Karoline[1], Brønnum, Dorte[1], Melgaard, Dorte[1], Leutscher, Peter[1], Buchwald, Dorte[2]

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2. Unit of Palliative Care, North Denmark Regional Hospital,

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All three groups asked about effect on symptoms as well as on the cancer disease. Some prior users asked about the difference between prescribed cannabis and cannabis bought on the black market. "I suppose that the cannabis that the physician prescribes is chemical – is it better than the product that I got"?
Conclusion: Patients with cancer in palliative care have great interest in asking questions about cannabis to HCPs, especially regarding expectations to the product, affect and side effects and practical considerations.

Perspectives
We need more research projects on the use of cannabis among patients in palliative care. The knowledge collected in this study can be used in a guideline for HCPs regarding information to patients about cannabis.

"I am so glad that I started treatment with cannabis. My daughter takes it too, because she suffers from headaches".

"I do not know so much about cannabis, but my children say it will be good for me..."

"I suppose that the cannabis that the physician prescribes is chemical – is it better than the product that I got"?

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North Denmark Regional Hospital

10

Impact of low-dose dronabinol therapy on cognitive function in cancer patients receiving palliative care – a case-series intervention study

Ditte Buchwald[1], Casper Smith[2], Dorte Buchwald[3], Kristina Winther[4], Ivan Bo Nielsen[5], Kirsten Klostergaard[1], Steen Kåre Fagerberg[1], Dorte Melgaard[1,6], Peter Leutscher[1,6]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Communication and Psychology, Aalborg University, Aalborg, Denmark
3. Unit of Palliative Care, North Denmark Regional Hospital, Hjoerring, Denmark
4. Unit of Palliative Care, North Denmark Regional Hospital, Broenderslev, Denmark
5. Interdisciplinary Pain Center, Aalborg
6. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
Use of medical cannabis (MC) has demonstrated promising therapeutic features as adjunct therapy to patients with advanced cancer not responding adequately to conventional palliative treatment. However, safety is a major concern, including impairment of cognitive function as a potential adverse reaction to MC. In this study we test Danish patients with advanced cancer disease for possible changes in cognitive performance due to starting dronabinol therapy.

Methods
Adult cancer patients with pain refractory to conventional palliative treatment were included in this case-series intervention study. Patients were examined at baseline prior to onset of dronabinol therapy and at a two-week follow-up using three WAIS III neurocognitive tests: Processing Speed Index (PSI), Perceptual Organization Index (POI), and Working Memory Index (WMI). Moreover, visual analogue scale (VAS), Major Depression Inventory (MDI), and Brief Fatigue Inventory (BFI) were used.

Results
Six patients completed the study and achieved a significant relief of pain with a daily dosage of 12.5 mg dronabinol (p=0.039). Cognition improved at follow-up in each of the three tested domains: processing (p=0.020), reasoning (p=0.034.), and memory (p=0.039). A contemporary decrease in reported depressive symptoms (p=0.043), and fatigue (p=0.043) was also observed.

Conclusion
These results indicate that low dose dronabinol therapy does not necessarily exert a negative effect on cognitive function in patients with advanced cancer. On the contrary, dronabinol may improve cognitive function either as a direct positive effect of dronabinol itself at low dose and/or because of the combined or separate relieving effects on pain, depression, and fatigue.

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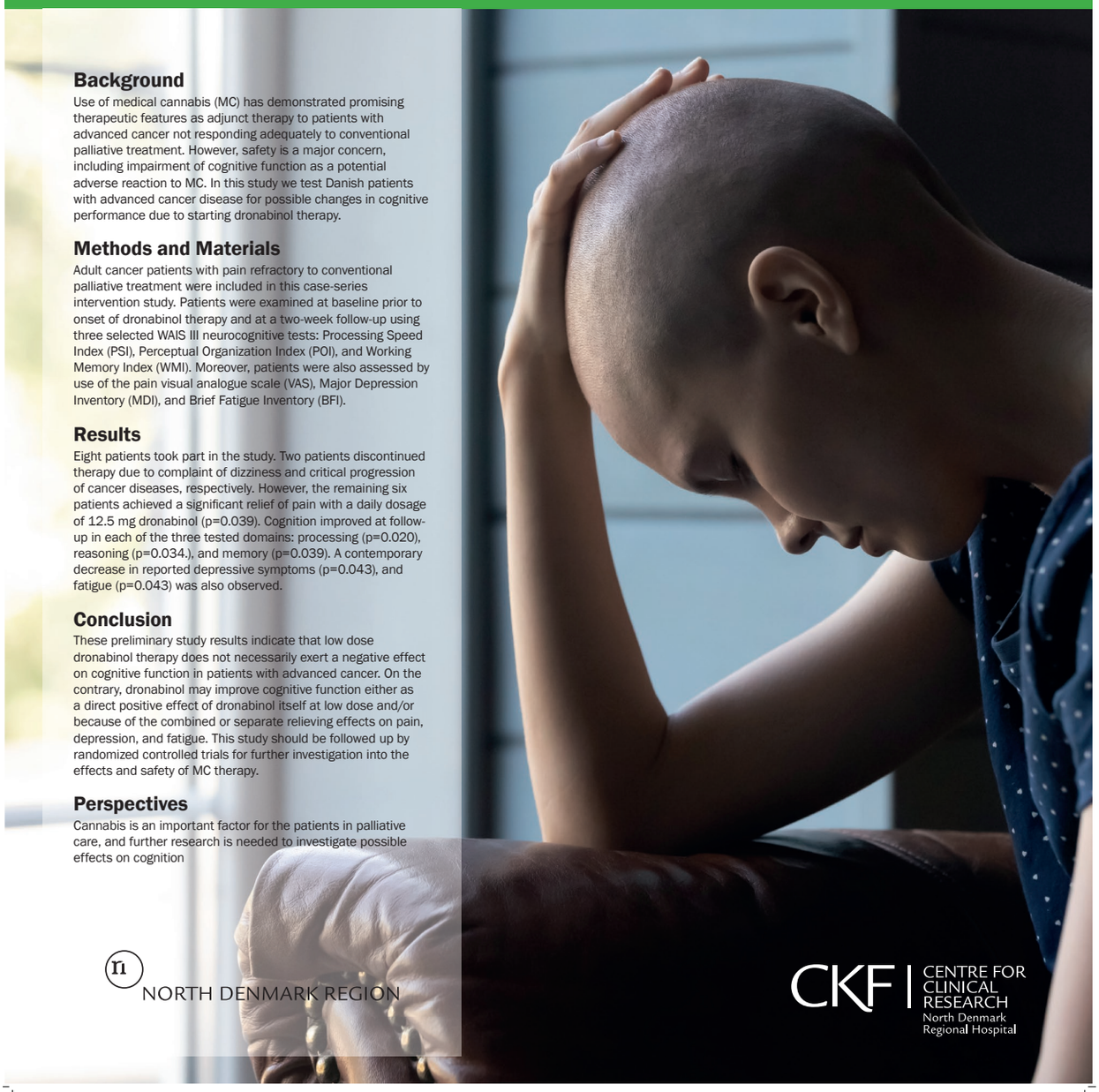
Results
Eight patients took part in the study. Two patients discontinued therapy due to complaint of dizziness and critical progression of cancer diseases, respectively. However, the remaining six patients achieved a significant relief of pain with a daily dosage of 12.5 mg dronabinol (p=0.039). Cognition improved at follow-up in each of the three tested domains: processing (p=0.020), reasoning (p=0.034.), and memory (p=0.039). A contemporary decrease in reported depressive symptoms (p=0.043), and fatigue (p=0.043) was also observed.

Conclusion
These preliminary study results indicate that low dose dronabinol therapy does not necessarily exert a negative effect on cognitive function in patients with advanced cancer. On the contrary, dronabinol may improve cognitive function either as a direct positive effect of dronabinol itself at low dose and/or because of the combined or separate relieving effects on pain, depression, and fatigue. This study should be followed up by randomized controlled trials for further investigation into the effects and safety of MC therapy.

Perspectives
Cannabis is an important factor for the patients in palliative care, and further research is needed to investigate possible effects on cognition



NORTH DENMARK REGION

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11

Cannabis among patients with cancer receiving palliative care - a cross-sectional survey

Dorthe Brønnum[1,4], Dorte Buchwald[2], Ditte Buchwald[1], Karoline Lichon Hesthaven[1], Kristina Winter[2], Sebastian W. Nielsen[3], Dorte Melgaard[1,4], Peter Leutscher[1,4]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Unit of Palliative Care, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Oncology and Palliative Care, Zealand University Hospital, Roskilde, Denmark
4. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Introduction
Self-medication with cannabis is common among patients with cancer. Absence of quality control and guidance by health care professionals (HCP) may expose patients to medical, safety and legal uncertainties. We aimed to investigate the extent and perception of cannabis use in patients with cancer receiving palliative care.

Material and method
A cross-sectional survey was conducted between June 2019 and January 2021 at Unit of Palliative Care, North Denmark Regional Hospital. Eligible participants were adult patients with cancer, excluding patients that were moribund or suffering from brain damage, dementia or delirium. Participants provided informed consent before completing a questionnaire.

Results
A total of 160 patients completed the questionnaire and the response rate was 66% (34 % declined). Median age was 73 years (range 19 to 96) and 54% were female. Lung cancer was the most common diagnosis (23%). History of cannabis use was reported by 39 (24%) patients and 121 (76%) were cannabis naïve. Among the experienced patients, 64% had discussed cannabis with HCP; this applied to 28% of the naïve patients ($p<0.01$). Among experienced and naïve patients, belief that cannabis has curative properties in cancer, figures were 51% versus 21%, respectively ($p<0.01$) Similarly, figures were 87% versus 61%, respectively, ($p=0.011$) regarding belief in cannabis for symptom relief.

Cannabis on prescription would be preferred to self-medication cannabis by 82% of the experienced and 98% of the naïve patients ($p<0.01$).

Conclusion
The majority of patients with cancer receiving palliative care perceived cannabis to be effective, either with curative intent or for symptom relief. Cannabis on prescription was preferred to self-medication by most patients.

CANNABIS AMONG PATIENTS WITH CANCER RECEIVING PALLIATIVE CARE

- a cross-sectional survey

Authors

Dorthe Brønnum[1], Dorte Buchwald[2], Ditte Buchwald[1], Karoline L. Hesthaven[1], Kristina Winter[2], Sebastian W. Nielsen[3], Dorte Melgaard[1,4], Peter Leutscher[1,4]

Affiliations

[1]*Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring*
[2]*Unit of Palliative Care, Department of Medicine, North Denmark Regional Hospital, Hjoerring*
[3]*Department of Clinical Oncology and Palliative Care, Zealand University Hospital, Roskilde*
[4]*Department of Clinical Medicine, Aalborg University, Aalborg*

Self-medication with cannabis among patients with cancer is common. Patients perceived cannabis to be effective either with curative intention or for symptom relief

History of cannabis use in 160 patients at North Denmark Regional Hospital

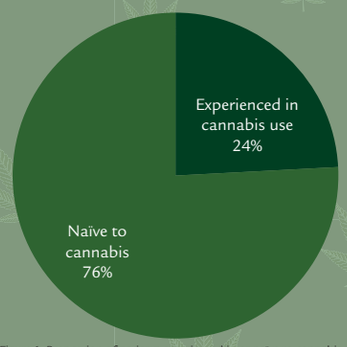

Figure 1. Proportion of patients experienced in or naïve to cannabis use

More patients experienced in cannabis use believed that cannabis has curative properties
Experienced 51% - Naïve 21% (p<0.01)

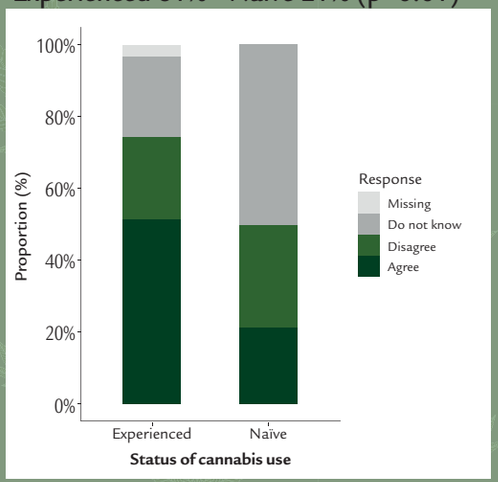

Figure 2. Experienced and naïve patients' response to the statement: *"Cannabis has a curative effect on cancer disease".*

The majority of patients believed that cannabis can relieve symptoms
Experienced 87% - Naïve 61% (p=0.011)

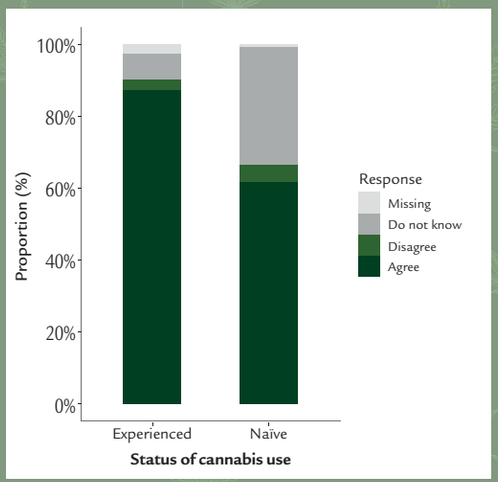

Figure 3. Experienced and naïve patients' response to the statement: *"Cannabis can relieve? reduce symptoms".*

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12

Patient-reported efficacy and safety of cannabis-based medicine among patients with refractory chronic pain – A retrospective observational real-world study of patients attending a Danish pain clinic

Karoline Lichon Hesthaven[1], Tina Horsted[2], Dorthe Brønnum[1], Peter Derek Christian Leutscher[1,3]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. The Pain Clinic in Farvergade and Clinic Horsted, Copenhagen, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
Chronic pain disorders are often associated with reduced quality of life. In some patients, adequate symptom relief is not achieved with conventional pain regimens or side effects are intolerable. In this context, cannabis-based medicine (CBM) are considered as a potential supplementary therapeutic option. This study aims to explore efficacy and safety of CBM among patients with refractory chronic pain.

Methods
A retrospective registry study was conducted in a population of patients with refractory pain, prescribed CBM from January until December 2018 in a Danish pain clinic. Data from patient medical records, including pain intensity and quality of life before and after initiation of CBM, and also adverse reactions (ARs), are assessed for further descriptive analysis.

Results
A total of 826 patients were identified and 535 (65%) had a follow-up within 28 to 100 days after first prescription for CBM and thereby included in the analysis. More females (70%) than males (30%) had prescription for CBM. A total of 26% (n=140) patients obtained a significant pain reduction of ≥30% on numeric rating scale. However, 24% of patients reported no effect of CBM. Moreover, improvement in patient reported quality of life was observed in almost half of patients (47%). One or more ARs were observed in 44% of patients. The most common ARs were fatigue (14%), dry mouth (10%) and dizziness (9%).

Conclusion
This study strongly suggests that treatment with CBM is safe and could be efficient to relieve pain and increase quality of life in difficult-to-treat patients with chronic pain. More randomized controlled trials in homogeneous patient groups are needed.

Patient-reported Efficacy and Safety of Cannabis-based Medicine among Patients with Refractory Chronic Pain

– A Retrospective Observational Real-world Study of Patients attending a Danish Pain Clinic

Karoline Lichon Hesthaven[1], Tina Horsted[2], Dorthe Brønnum[1], Peter Derek Christian Leutscher[1,3]

[1]*Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark*
[2]*The Pain Clinic in Farvergade and Clinic Horsted, Copenhagen, Denmark*
[3]*Department of Clinical Medicine, Aalborg University, Denmark*

Background

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Aim

This study aims to explore efficacy and safety of cannabis-based medicine among patients with refractory chronic pain.

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A retrospective registry study was conducted in a population of patients with refractory pain, prescribed CBM from January until December 2018 in a Danish pain clinic. Data from patient medical records, including pain intensity and quality of life before and after initiation of CBM, and also adverse reactions (ARs), are assessed for further descriptive analysis.

Cannabis-based medicine could be efficient to increase quality of life in patients with chronic pain

Cannabis-based medicine could be efficient to relieve pain in patients with chronic pain

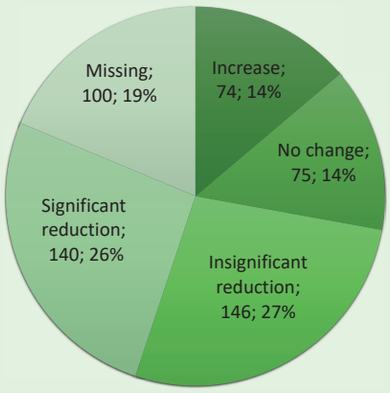
Cannabis-based medicine is safe to use among patients with chronic pain

A total of 826 patients were identified and 535 (65%) had a follow-up within 28 to 100 days after first prescription for CBM and thereby included in the analysis. More females (70%) than males (30%) had prescription for CBM.

Efficacy

Change in pain intensity on numeric rating scale (NRS)

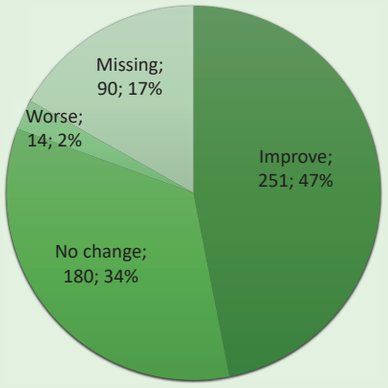
N= 535



Increase: NRS<0%
No change: NRS=0%
Insignificant reduction: >0 - <30%
Significant reduction: NRS≥30%

Change in patient reported quality of life

N= 535



Adverse reactions

44% of patients experienced one or more adverse reaction

Most common adverse reactions

- Fatigue (14%)
- Dry mouth (10%)
- Dizziness (9%)
- Increased appetite (5%)
- Headache (4%)

Funding
Bionorica
Oda og Hans Svenningsens Research Grant

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Gastroenterologi og Ernæring

13

The Quality of Life in Citizens with Oropharyngeal Dysphagia – A Cross-Sectional Study

Bettina Burgdorff Bendsen[1], Diana Jensen[2], Signe Westmark[3], Anne Lund Krarup[3,4,5], Dorte Melgaard[3,5]

1. Department of Physiotherapy and Occupational Therapy, North Denmark Regional Hospital, Hjoerring, Denmark
2. Center of Rehabilitation, Toender, Denmark
3. Center for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Neuro-gastroenterological Research, North Denmark Regional Hospital, Hjoerring, Denmark
5. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Introduction
Dysphagia is one of the multiple risk factors that impair an individual's experience of mealtimes. A limited number of studies have been carried out to contribute knowledge on the quality of life (QoL) of citizens with oropharyngeal dysphagia (OD) who live independently.

The aim of this study was to evaluate the health-related quality of life HRQL in citizens with OD living independently.

Method
This cross-sectional study was performed in seven municipalities in Denmark between March 2019 and December 2020. The 90 citizens included (54% female, mean age 76.6 years (SD 0.8)) were ≥18 years, diagnosed with OD using the Volume-Viscosity Swallow Test and Minimal Eating Observation Form version II. They also had to be able to understand the questionnaires: The Dysphagia Handicap Index-DK, Barthel 20, and European Quality of Life – 5 Dimensions.

Results
A total of 66% of the participants reported needing more time to eat, 64% coughed while eating, and 58% while drinking. Additionally, 60% reported having a dry mouth, 62% said they needed to drink to succeed with swallowing foods, and 57% reported that they had to swallow multiple times. About one third of participants reported feeling embarrassed when eating with others and felt sad about not being able to eat everything. Also, they could not enjoy eating as they used to, and/or felt handicapped or limited.

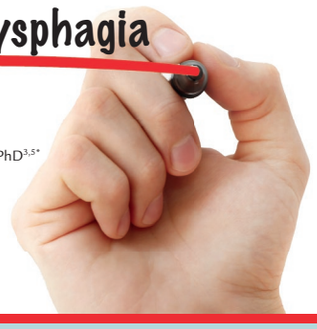
Conclusion
OD had a high impact on the QoL in citizens with OD living independently. Focus is needed on xerostomia as well as on the psychological areas surrounding mealtimes for citizens with OD.

The Quality of Life in Citizens with Oropharyngeal Dysphagia

- A Cross-Sectional Study

Bendsen, Bettina Burgdorff, BSc[1] • Jensen, Diana, BSc[2] • Westmark, Signe, MSc[3] • Krarup, Anne Lund, PhD[3,4,5] • Melgaard, Dorte, PhD[3,5*]

[1]*Department of Physiotherapy and Occupational Therapy, municipality of Hjoerring, Bistrupvej 3, 9800 Hjoerring, Denmark*
[2]*Center of Rehabilitation, municipality of Toender, Carstensgade 6-10, 6270 Toender, Denmark*
[3]*Center for Clinical Research, North Denmark Regional Hospital, Bispensgade 37, 9800 Hjoerring, Denmark*
[4]*Department of Neuro-gastroenterological Research, North Denmark Regional Hospital, Bispensgade 37, 9800 Hjørring, Denmark*
[5]*Department of Clinical Medicine, Aalborg University, 9000 Aalborg, Denmark*



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A total of 66% of the participants reported needing more time to eat, 64% and 58% coughed while eating and drinking, respectively. Additionally, 60% reported having a dry mouth, 62% said they needed to drink to succeed with swallowing foods, and 57% reported that they had to swallow multiple times. About 30% of participants reported feeling embarrassed when eating with others and felt sad about not being able to eat everything. Also, they could not enjoy eating as they used to, and/or felt handicapped or limited.

Table 1: Demographic data

	N = 90
Age	78.0 (71.9; 84.5)
Female sex	51 (54.4)
BMI	25.8 ± 7.32
Underweight <18.5	10 (11.1)
Normal weight 18.5-25	35 (38.9)
Overweight 25-30	26 (28.9)
Obese >30	18 (20.0)
Energy intake (kilojoule)	6388.2 ± 2294.7
Protein intake (g/day)	57.1 ± 24.8
Hand grip strength (kg)	20.1 (11.2;26.8)
History of stroke	32 (35.6)
Another neurological comorbidity	15 (16.7)
Respiratory comorbidity	29 (32.2)
Cardiac comorbidity	26 (28.9)
Ear, nose and throat comorbidity	4 (4.4)
Rheumatological comorbidity	27 (30.0)
Other diseases	38 (42.2)
FOIS score	5 (5;6)
Score 4	4 (4.4)
Score 5	46 (51.1)
Score 6	39 (43.3)
Living situation	
Independently living	52 (57.8)
Temporary rehabilitation	13 (14.4)
Nursing home	9 (10.0)

The data is presented either as n (%), mean ± SD or median (1st;3rd quartiles). BMI, Body Mass Index; EQ5D, European Quality of life - 5 dimensions; DHI, Dysphagia HandicapIndex; FOIS, Functional Oral Intake Scale.

Table 2: Results for DHI-DK (n (%))

	No	N = 90 Partial	Yes
Cough when drinking	26 (28.9)	51 (56.7)	13 (14.4)
Cough when eating	32 (35.5)	43 (47.8)	15 (16.7)
Dry mouth	30 (33.3)	17 (18.9)	43 (47.8)
Need to drink to swallow	28 (31.1)	15 (16.7)	47 (52.2)
Weight loss	63 (70.0)	12 (13.3)	15 (16.7)
Avoid certain food	34 (37.8)	11 (12.2)	45 (50.0)
Changed way of swallowing	57 (63.3)	7 (7.8)	26 (28.9)
Embarrassed eating with others	60 (66.7)	13 (14.4)	17 (18.9)
Need more time to eat	24 (26.7)	7 (7.8)	59 (65.5)
Eat smaller meals, but more often	72 (80.0)	5 (5.6)	13 (14.4)
Extra swallowing needed	33 (36.7)	22 (24.4)	35 (38.9)
Sad about not being able to eat everything	58 (64.4)	9 (10.0)	23 (25.6)
Cannot enjoy eating as previously	52 (57.8)	12 (13.3)	26 (28.9)
Less social	76 (84.5)	3 (3.3)	11 (12.2)
Avoid eating	79 (87.8)	7 (7.8)	4 (4.4)
Eat less	60 (66.7)	13 (14.4)	17 (18.9)
Nervous	61 (67.8)	11 (12.2)	18 (20.0)
Feel handicapped or limited	61 (67.8)	18 (20.0)	10 (12.2)
Angry with myself	67 (74.4)	9 (10.0)	14 (15.6)
Choke on medicine	72 (80.0)	12 (13.3)	6 (6.7)
Afraid of choking and failing to breathe	70 (77.8)	9 (10.0)	12 (12.2)
Changed diet	55 (61.1)	15 (16.7)	20 (22.2)
Choking sensation	63 (70.0)	15 (16.7)	12 (13.3)
Throwing up	74 (82.3)	13 (14.4)	3 (3.3)

Conclusion

Oropharyngeal Dysphagia had a high impact on the QoL in citizens living independently. Focus is needed on xerostomia as well as on the psychological areas surrounding mealtimes for citizens with Oropharyngeal Dysphagia.

14

Ventrikelindhold efter indtag af 175ml isvand forud for gastroskopi hos voksne, vågne, raske patienter

Caroline Hornnes Pedersen[1], Anders Skallerup Andersen[1], Lillian Skov Søndergaard Lundberg[1,2], Pernille Linde Jellestad[1], Thale Almås[1], Steen Kåre Fagerberg[3], Kim Therkelsen[4], Kjeld Asbjørn Jensen Damgaard[1]

1. Anæstesi og Intensiv, Regionshospital Nordjylland, Hjørring
2. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
3. Anæstesi og Intensiv, Aalborg Universitetshospital, Aalborg
4. Gastromedicinsk afsnit, Regionshospital Nordjylland, Hjørring

Baggrund
Forud for anæstesi skal patienterne faste 2 timer for væske. Studier har vist gode resultater med liberal væsketerapi til børn forud for operation, dette er praksis for børn i Sverige.

Metode
Vi har lavet et randomiseret, blindet studie på voksne, raske mennesker til elektiv gastroskopi, hvor vi har givet dem 175ml isvand forud for gastroskopi. Gastroskopien er startet med at ventrikelindholdet blev suget op og målt. I alt er inkluderet 50 patienter. Her præsenteres data for de første 26 inkluderede patienter.

Resultater
Ud af de 26 patienter, ønskede en enkelt patient ikke deltagelse alligevel, hvorfor denne ekskluderedes. Af de 13 patienter, der fik isvand, varierede ventrikelindholdet fra 3ml til 301ml. De 13 patienter indtog isvandet i gennemsnit 14min (5-28min) forud for gastroskopien. Ud af de 13 inkluderede er der to patienter med over 100ml i ventriklen (301ml og 115ml). Af de 12 i den fastende gruppe er der en enkelt med ventrikelindhold over 100ml (114ml). Gastroskopøren har noteret, en enkelt patient med kvalme, opkast og ubehag i gruppen af fastende patienter og ingen i interventionsgruppen.

Vi finder signifikant forskel på ventrikelindhold i grupperne, dog er mængden af væske fortsat lille efter indtag af 175ml. For at kunne ændre fastereglerne til mere liberalt væskeindtag kræves således større datasæt.

Konklusion
Signifikant forskel (P 0.007) på ventrikelindhold i den fastende gruppe vs. gruppen, der havde indtaget 175ml isvand. En enkelt patient med over 200ml ventrikelindhold efter indtag af 175ml isvand. Større studie er nødvendigt.

VENTRIKELINDHOLD EFTER INDTAG AF 175ML ISVAND FORUD FOR GASTROSKOPI HOS VOKSNE, VÅGNE, RASKE PATIENTER.

REGION NORDJYLLAND – i gode hænder

Caroline Hornnes Pedersen[1] MD, Anders Skallerup Andersen[1] MD, Lillian Skov Søndergaard Lundberg[1] Forskningssygeplejerske, Pernille Linde Jellestad[1] MD, Thale Almås[1] MD, Steen Kåre Fagerberg[2] MD, PhD, [3]Kim Therkelsen, MD, Kjeld Asbjørn Jensen Damgaard[1] MD, PhD, lektor
[1]Anæstesi og Intensiv, Regions Hospital Nordjylland, Hjørring, Danmark [2]Anæstesi og Intensiv, Aalborg Universitetshospital, Aalborg, Danmark 3 Gastromedicinsk afsnit, Regionshospital Nordjylland, Hjørring, Danmark

Introduktion

Fastereglerne forud for anæstesi er seks timer for fast føde og to timer for klare væsker. Forud for 1999 var det praksis, at patienter skulle faste fra midnat forud for anæstesi. Fastereglerne er gældende for både børn og voksne, med henblik på at modvirke risikoen for aspirationspneumonier og at sikre at ventriklen er tømt forud for anæstesi(1).

I Uppsala fulgte man 9.889 børn fra 2008 til 2013. Børnene fik lov at drikke klare væsker frem til de blev kaldt ned til operationsgangen (2). Her påvistes ikke flere aspirationspneumonier i forbindelse med anæstesi (3:10.000 mod de vanlige 1-10:10.000).

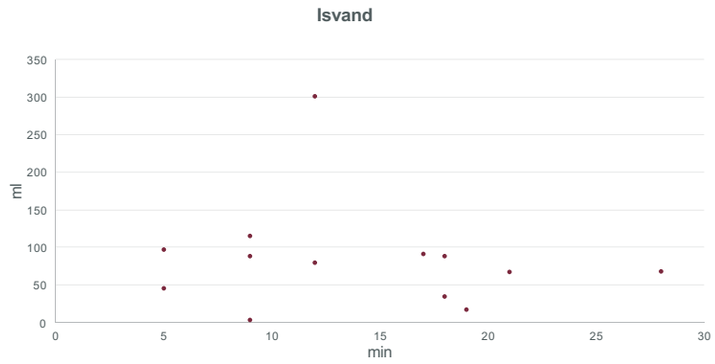
Operationstidspunkterne er svære at forudsige, da akutte operationer. Ved at minimere fasteperioden forventer vi at kunne nedbringe ubehaget for patienten.

Metode

Fra d. 1.3.20 til d. 18.6.21 inkluderedes 50 ASA 1-2 patienter forud for elektiv gastroskopi i et blindet forsøg. På denne poster kigger vi på de første 26 inkluderede patienter. Halvdelen fik 175ml isvand forud for elektiv gastroskopi, mens den anden halvdel fulgte de vanlige fasteregler, dvs. 2 timers faste for klare væsker og 6 timer for fødevare. Gastroskopøren startede gastroskopien med at suge væske op fra ventriklen, så denne var visuelt tom. Ventrikelindholdet blev opsamlet og målt. Gastroskopøren var blindet under forløbet. Alle inkluderede patienter fik en seddel med til gastroskopi, hvor gastroskopøren havde mulighed for at skrive kommentarer samt, om der havde været ubehag ifm. proceduren.

Statistik

Data ej normalfordelt. Forskelle grupperne imellem vurderes statistisk signifikant ved en p-værdi< 0.05. Mann-Whitney non-parametrisk t-test blev brugt til at sammenligne ventrikelindhold, og Spearman correlation blev benyttet til at sammenholde indtagelsestidspunkt og ventrikelindhold.



	Isvand	Faste	P-værdi
Antal patienter	13	12	n/a
Ventrikelindhold (ml)	73.5 (36.75-90.25)	10 (3-57)	0.007

Resultat

Ud af de 26 patienter, ønskede en enkelt patient ikke deltagelse alligevel, hvorfor denne ekskluderedes. Af de 13 patienter der fik isvand varierede ventrikelindholdet fra 3ml til 301ml. De 13 patienter indtog isvandet i gennemsnit 14min (5-28min) forud for gastroskopien. Ud af de 13 inkluderede er der to patienter med over 100ml i ventriklen (301ml og 115ml). Af de 12 i den fastende gruppe er der en enkelt med ventrikelindhold over 100ml (114ml). Gastroskopøren har noteret, en enkelt patient med kvalme, opkast og ubehag i gruppen af fastende patienter og ingen i interventionsgruppen.

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Konklusion

- Signifikant forskel (P 0.007) på ventrikelindhold i den fastende gruppe vs. gruppen, der havde indtaget 175ml isvand.
- En enkelt patient med over 200ml ventrikelindhold efter indtag af 175ml isvand.
- Større studie er nødvendigt.

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Der er ikke modtaget funding i forbindelse med dette projekt. Forfatterne har ikke opgivet nogen interessekonflikter.

REGION NORDJYLLAND – i gode hænder

15

Efficacy of FODMAP elimination and subsequent blinded placebo-controlled provocations in patients with ulcerative colitis in remission and comorbid symptoms of irritable bowel syndrome - A randomized, crossover feasibility study

Dorte Melgaard[1,2], Jeanette Sørensen[3], Johannes Riis[1], Tine S. Ovesen[3], Peter Leutscher[1,2], Suzette Sørensen[1,2], Julie K. Knudsen[1], Caspar Bundgaard-Nielsen[1], Jeanette Ejstrup[3], Ann-Maria Jensen[1], Mette Borre[5], Anne L. Krarup[2,3,6]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Department of Medicine, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Clinical Nutrition, North Denmark Regional Hospital, Hjoerring, Denmark
5. Department of Hepatology and Gastroenterology, Aarhus University Hospital, Aarhus, Denmark
6. Department of Acute Medicine and Trauma Care, Aalborg University Hospital, Aalborg, Denmark

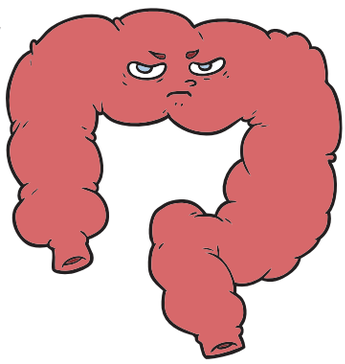
Background
Objective: It has been hypothesized that patients with inflammatory bowel disease (IBD) and comorbid symptoms of irritable bowel syndrome (IBS) are intolerant to fermentable carbohydrates (FODMAPs). The gold standard for evaluating food intolerance is elimination followed by blinded placebo-controlled provocations. The aim of the study was to evaluate IBS symptoms in patients with ulcerative colitis in deep remission while eliminating and subsequent provoking with FODMAPs and placebo and compare to non-diet controls.

Methods
Eight-weeks randomized open label FODMAP elimination with double-blinded, crossover provocations of FODMAP and placebo. Diet patients were placed on a low FODMAP diet for eight weeks with blinded two-weeks-lasting provocations after two and six weeks. Symptoms were compared within diet patients, compared to non-diet patients, and assessed by questionnaires, including the Irritable Bowel Syndrome Severity Scoring System (IBS-SSS). Blood and stool samples were collected.

Results
Of the 19 patients, 12 were randomized to diet and seven to non-diet. Eliminating low FODMAP for two weeks resulted in significant decreases in pain and bloating ($p<0.003$). There were no difference in pain scores between diet patients and non-diet controls ($p=0.92$). After two week of double-blinded provocations with placebo, pain and bloating scores increased returning to baseline levels ($p>0.05$). This was also observed after FODMAP provocation. Patients did not guess blinding ($p>0.99$).

Conclusions
Study results suggested that placebo and nocebo responses explained the symptom dynamics when eliminating and provoking with FODMAPs. Recruitment to a diet study was challenging. Due to the small sample size, results need confirmation in larger studies.

A randomized, placebo controlled, double blinded, cross over FODMAP provocation in patients with ulcerative colitis and irritable bowel syndrome on a Low FODMAP diet



Dorte Melgaard[1,2] • Jeanette Sørensen[3] • Johannes Riis[1] • Tine Stab Ovesen[3] • Peter Leutscher[1,2] • Suzette Sørensen[1,2] • Julie Kristine Knudsen[1] • Caspar Bundgaard-Nielsen[1] • Jeanette Ejstrup[3] • Ann-Maria Jensen[1] • Mette Borre[5] • Anne Lund Krarup[2,3,6].

1) Centre for Clinical Research, North Denmark Regional Hospital, Hjørring, Denmark
2) Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3) Department of Medicine, North Denmark Regional Hospital, Hjørring, Denmark
4) Department of Neurogastroenterological Research, Department of Medicine, North Denmark Regional Hospital, Hjørring, Denmark
5) Department of Hepatology and Gastroenterology, Aarhus University Hospital, Aarhus, Denmark
6) Department of Acute Medicine and Trauma Care, Aalborg University Hospital, Aalborg, Denmark

Background

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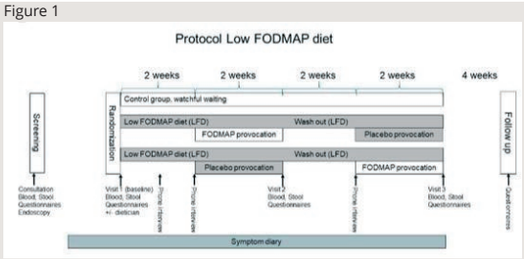
Method

This was an eight-week randomized, placebo-controlled, double-blinded, crossover study was conducted to assess the effect of a low FODMAP diet for 2 two weeks on IBS symptoms followed by FODMAP provocation in a blinded crossover design (Figure 1). Patient symptoms were assessed by different questionnaires, including the Irritable Bowel Syndrome Severity Scoring System (IBS-SSS). Blood and stool samples were collected before, during and after treatment in patients receiving diet, and at the same time points in the control group (Figure 1). ClinicalTrials.gov: NCT02469220

Figure 1



Results

Nineteen patients were randomized, 12 to a low FODMAP diet (Figure 2). Two weeks of eliminating low FODMAP resulted in a significant decrease in pain and bloating scores ($p<0.05$, Figure 3 A-D). After two weeks of double-blinded provocations with either placebo or FODMAPs, both pain, and bloating scores returned to baseline (Figure 3 A-B). Furthermore, the IBS-SSS scores were comparable to the baseline levels ($p>0.05$, Figure 4). Patients did not guess blinding ($p>0.99$). The control group reduced pain levels to the same level as the low FODMAP diet group despite no treatment (Figure 3 C-D).

Figure 3

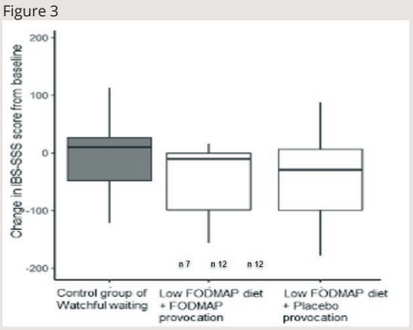


Figure 2

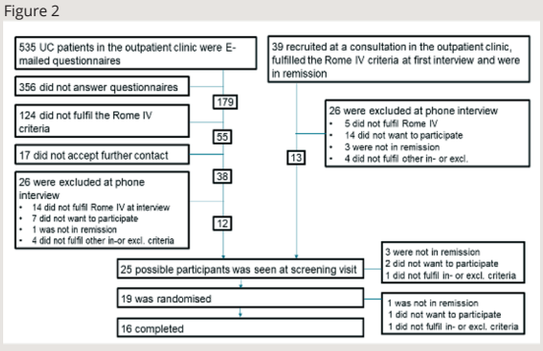
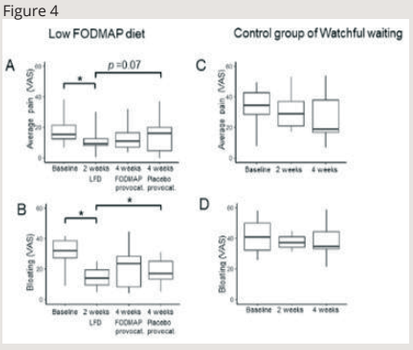


Figure 4



Conclusions

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16

Hvilken effekt har generel styrke-og konditionstræning af 65+ årige med let til moderat dysfagi – et interventionsstudie

Gerda Thingbak Nørgaard[1], Dorte Melgaard[2,3]

1. Træningsenheden, Hjørring Kommune, Hjørring
2. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
3. Klinisk Institut, Aalborg Universitet, Aalborg

Baggrund
Der er en stigning i antallet af ældre i Danmark. Med alderen falder den generelle muskelstyrke og kondition. Faldende muskelstyrke har en sammenhæng med oral sarkopeni hos ældre. Dysfagi betinget af oral sarkopeni giver forøget risiko for underernæring, pneumoni, dødelighed og nedsat livskvalitet. Formålet med dette studie er at undersøge prævalensen af dysfagi hos ældre (+65) henvist til almen genoptræning som følge af generel funktionsnedsættelse, samt effekten af et standardiseret generelt træningsforløb ift. dysfagi.

Metode
Interventionsstudiet gennemføres i Træningsenheden, Hjørring Kommune i perioden 1. september 2021 til 1. juni 2022. Studiet inkluderer borgere +65 år og visiteret til forløb på holdet "Styrk din Hverdag". Eksklusionskriterierne er svære kognitive udfald, demens, psykisk sygdom og neurologiske lidelser Deltagerne på holdet bliver testet med EAT10 ved start og slut af det 10 uger lange træningsforløb, ligeledes testes med 6 min gangtest, 30 sekunder rejse sætte sig test og håndtrykskraft.

Resultater
Resultaterne vil blive præsenteret i efteråret 2022. Der vil blive præsenteret prævalens af dysfagi hos gruppen af ældre, der visiteres til almen genoptræning på hold i Hjørring Kommune. Ligeledes afrapporteres effekten af almen træning til borgere med let til middelsvær dysfagi.

Perspektiver
Resultaterne fra dette studie vil danne grundlag for, om der i fremtiden screenes for dysfagi på holdet "Styrk din hverdag" i Hjørring Kommune. Desuden om der fremadrettet evt vil blive tilbudt almen træning til borgere med let til moderat dysfagi.

Hvilken effekt har generel styrke-og konditionstræning af 65+ årige med let til moderat dysfagi – et interventionsstudie

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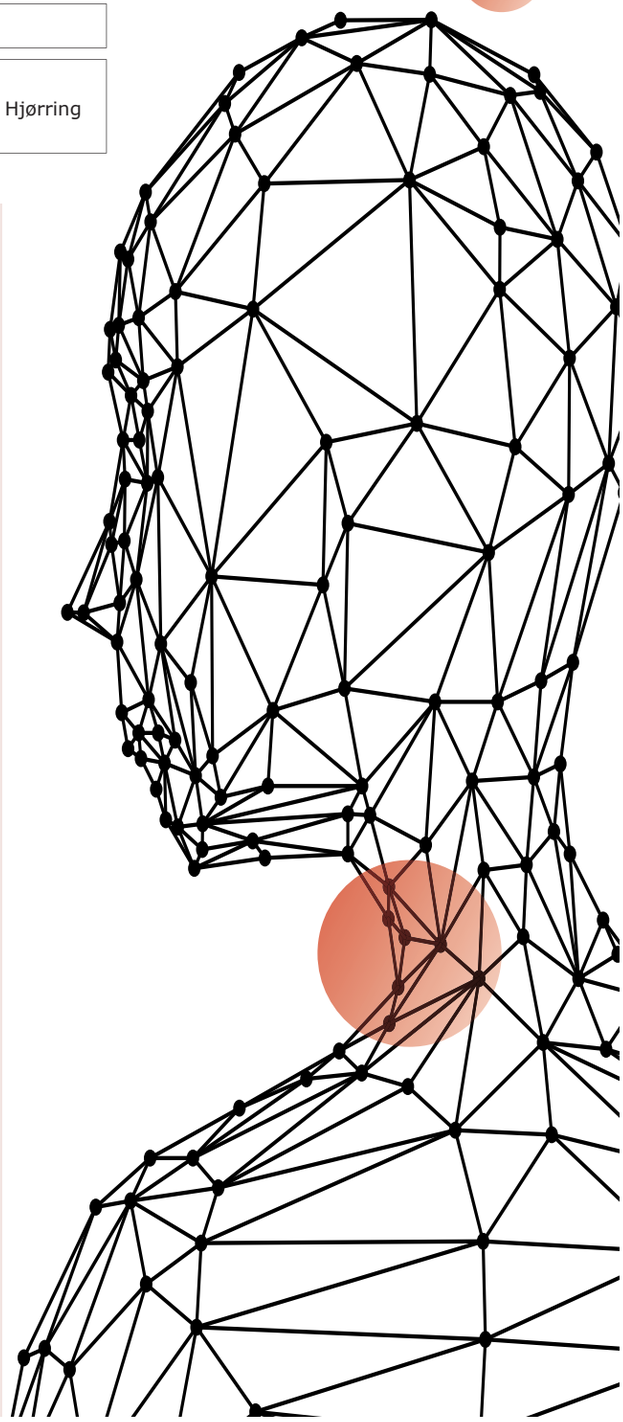

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17

Prevalence of Swallowing and Eating Difficulties in an Elderly Postoperative Hip Fracture Population - A Multi-Center-Based Pilot Study

Gitte Madsen[1], Stine M. Kristoffersen[2], Mark R. Westergaard[3], Vivi Gjødvad[1], Merete M. Jessen[1], Dorte Melgaard[4, 5]

1. Department of Physiotherapy and Occupational Therapy, Randers Regional Hospital, Randers, Denmark
2. Department of Physiotherapy and Occupational Therapy, Horsens Regional Hospital, Horsens, Denmark
3. Department of Physiotherapy and Occupational Therapy, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
5. Center for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark

Background
Elderly patients operated for hip fracture are characterized by high age and high degree of comorbidity and need of care, factors previously found to be associated with swallowing and eating difficulties. The aim of this study was to investigate the prevalence of swallowing and eating difficulties in an elderly postoperative hip fracture population and to identify factors associated with swallowing and eating difficulties.

Methods
A cross-sectional multi-center pilot study was performed, including patients ≥65 years, operated for hip fracture, and able to participate in a swallowing and eating assessment. A clinical assessment was conducted using Danish versions of the standardized tools Volume-Viscosity Swallow Test and Minimal Eating Observation Form-version II. Demographic data and clinical characteristics were examined.

Results
A total of 78 patients (mean age 81.4 years (SD 7.8), 30.8% male) were included. Swallowing and eating difficulties were present in 60 patients (77%). Swallowing and eating difficulties were significantly associated with living in a nursing home before hospital admission ($p = 0.014$), low habitual New Mobility Score ($p = 0.018$), and absence of cardiac comorbidity ($p = 0.023$).

Conclusion
The results underline the importance of focusing on swallowing and eating difficulties in elderly patients operated for hip fracture to ensure effectivity and safety and optimize the prognosis for the patient.

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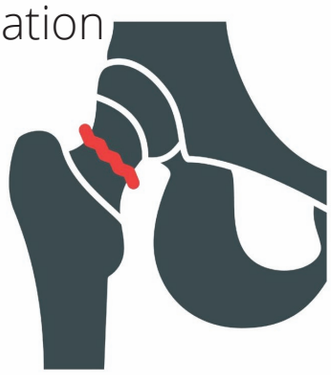

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Table 1

Population Variable	*Swallowing and Eating Difficulties (n = 60)*	*No Swallowing and Eating Difficulties (n = 18)*	*p-value*
Gender			0.754
Male	19 (31.7)	5 (27.8)	
Female	41 (68.3)	13 (72.2)	
Age (year), mean (SD)	81.1 (8.2)	82.4 (6.5)	0.544
Height (cm), mean (SD)	166.2 (10.8)	168.3 (10.1)	0.483
Weight (kg), mean (SD)	66.7 (16.0)	69.8 (10.9)	0.442
Body mass index, mean (SD)	24.0 (4.4)	25.3 (4.0)	0.267
Habitual housing form			0.014
Own residence	44 (73.3)	18 (100.0)	
Nursing home	16 (26.7)	0 (0.0)	
American Society of Anesthesiologists score, mean (SD)	2.6 (0.6)	2.3 (0.6)	0.128
Habitual New Mobility Score, mean (SD)	5.4 (2.5)	7.4 (2.1)	0.018
Time from admission to surgery (hours), mean (SD)	13.2 (9.8)	11.1 (9.7)	0.422

Table 2

Population Variable	*Swallowing and Eating Difficulties (n = 60)*
Volume-Viscosity swallow test	38 (63.3)
Impaired safety	17 (28.3)
Impaired efficacy	32 (53.3)
Minimal Eating Observation Form – II	48 (80.0)
Ingestion	48 (80.0)
Sitting position	38 (63.3)
Manipulation of food on the plate	23 (38.3)
Transport of food to the mouth	22 (36.7)
Deglutition	38 (63.3)
Manipulation of food in the mouth	22 (36.7)
Swallowing	27 (45.0)
Ability to chew	30 (50.0)
Energy/appetite	19 (31.7)

Results

A total of 78 patients (mean age 81.4 years (SD 7.8), 30.8% male) were included. Swallowing and eating difficulties were present in 60 patients (77%). Swallowing and eating difficulties were significantly associated with living in a nursing home before hospital admission (p = 0.014), low habitual New Mobility Score (p = 0.018), and absence of cardiac comorbidity (p = 0.023).

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Patients' experiences eating in a hospital – a qualitative study

Karen Lyng Larsen[1], Gitte Schjøtler[2], Dorte Melgaard[3,4]

1. Department of Quality and Patient Safety, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine and Acute Medicine, Staff Managements, Thisted, Aalborg University Hospital, Aalborg, Denmark
3. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
A meal is a complex activity and several factors influence the intake of nutrition. The purpose of the study is to identify the experiences of patients regarding eating situations, wishes and needs in connection with meals during their stay in hospital.

Methods
Twenty semi structured interviews were conducted at the North Denmark Regional Hospital and Aalborg University Hospital, Thisted. Inclusion criteria were age ≥18, cognitively and linguistically capable of participating and independent consumption of food ≥24 hours. The participants were selected based on sex, age and surgical and medical departments to ensure a broad representation.

Results
The patients experienced that the health professionals were friendly and caring and the food was good. The patients reported a number of experiences that are presented in the following themes: "The care relationship", "Meeting the system" , "Influence from the surroundings" and "Social interaction with fellow patients".
Some patients felt that they were met by helpful and accommodating health professionals while others felt rejected and corrected. The patients reacted to the health professionals being busy by accepting the conditions. Hospital surroundings with e.g. catheter bags influenced and diminished the patients desire for food. Some patients wanted the company of other patients during their meal but would like to be able to choose who they shared their meals with, others felt exposed and found it undignified and preferred to eat alone.

Conclusions
It is important to ensure individual settings for the patients during meals and focus on the relationship between patients and health professionals.

Patients' experiences eating in a hospital – a qualitative study

Karen Lyng Larsen [1] • *Gitte Schjøtler* [2] • *Dorte Melgaard* [3,4]

1. Department of Quality and Patient Safety, North Denmark Regional Hospital, Hjørring
2. Department of Clinical Medicine and Acute Medicine, Staff Managements, Thisted, Aalborg University Hospital, Aalborg
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19

Food preferences of seriously ill patients in Denmark: A quality development study

Line Elise Møller Hansen[1], Anders Johst Jensen[1], Torben Breindahl[2], Margit Oien Nielsen[3], Anne Lund Krarup[4,5], Dorte Melgaard[1,5]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Biochemistry, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Dietitians, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Acute Medicine and Trauma Care, Aalborg University Hospital, Aalborg, Denmark
5. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
Food and taste preferences of patients are prone to change with age or illness and are not well defined. The aim of the study was to investigate the food preferences of elderly and seriously ill Danish patients.

Methods
The study was based on the Plan, Do, Study, Act-cycle and included three repetitions. Session 1) Randomly selected patients at North Denmark Regional Hospital, tasted and rated six meals with a high level of protein. The custom prepared meals were a cold buttermilk soup, tomato soup, potato soup, Jerusalem artichokes soup, chips, and an energy drink. The participants were asked to score the meals on a 5-point Likert Scale. Session 2) Citizens with chronic obstructive pulmonary disease were included in a focus group interview. Session 3) Meals with the highest score were modified based on the responses received in sessions 1 and 2 and retested.

Results
The order of preference from session 1 was the cold buttermilk soup, tomato soup and potato soup with mean scores of 4.6, 3.9 and 3.6, respectively. Participants in the focus group interview excluded the use of nuts and that a thick soup was better. In session 3, retesting of the modified meals showed mean scores for respectively buttermilk soup, tomato soup and potato soup of 4.7, 3.8 and 4.2. Thick soups edible without the need to chew were the preferred choices.

Conclusions
This study highlights the need to involve patients in the development, tasting sessions and final choice of personalized food types offered to patients during hospitalization.

Food preferences of seriously ill patients in Denmark

A quality development study

Line Elise Møller Hansen[1], Anders Johst Jensen[1], Torben Breindahl[2], Margit Oien Nielsen[3], Anne Lund Krarup[4,5], Dorte Melgaard[1,5]

[1]Centre for Clinical Research, North Denmark Regional Hospital, Hjørring
[2]Department of Clinical Biochemistry, North Denmark Regional Hospital, Hjørring
[3]Department of dietitians, North Denmark Regional Hospital, Hjørring
[4]Department of Acute Medicine and Trauma Care, Aalborg University Hospital, Aalborg
[5]Department of Clinical Medicine, Aalborg University, Aalborg

BACKGROUND

With ageing the body mass often decrease, and the risk of malnutrition increases. Affected taste and smell senses with chewing and swallowing problems affect the elderly's ability to eat and drink as normal. In Denmark, 30% of patients have poor nutritional status already at hospital admission. Furthermore, the use of medicine may also affect food taste. Consequently, food preferences among seriously ill patients are important to study and development of personalized food types may be of benefit in order to improve nutrition status during hospitalization and after discharge.

METHODS

The study was based on the Plan, Do, Study, Act-cycle and included three repetitions. Session 1) Randomly selected patients at North Denmark Regional Hospital, tasted and rated six newly developed meals with a high level of protein and prepared by using enzyme techniques to enhance flavors and taste. These were a cold buttermilk soup, tomato soup, potato soup, Jerusalem artichokes soup, chips, and an energy drink from the pharmacy.
The custom prepared meals were enriched with a higher level of protein than the protein energy drink from the pharmacy (food analysis will follow later).
The participants were asked to score the meals on a 5-point Likert Scale. Session 2) Citizens with chronic obstructive pulmonary disease were included in a focus group interview to uncover their food preferences. Session 3) Meals with the highest score were modified based on the responses received in sessions 1 and 2 and retested.

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REGIONSHOSPITAL NORDJYLLAND – i gode hænder

CKF CENTER FOR KLINISK FORSKNING Regionshospital Nordjylland

AALBORG UNIVERSITETSHOSPITAL – i gode hænder

20

Faecal calprotectin as a biomarker of intestinal low-grade inflammation in ICU patients: a pilot study

Mads Hoelgaard Christensen[1], Janne Eriksen[1], Karoline Hardis[1], Mads Hoelgaard Christensen[1], Sarah Brøgger Johansen[1], Thomas Victor Christensen[1]

1. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background and aim
Intestinal dysbiosis and broadspectrum antibiotics have been associated with development of low-grade inflammation in the gut. Patients admitted to the ICU are subject to increased risk of developing intestinal inflammation maintaining them in a critical condition. Faecal calprotectin (FC) as a biomarker of intestinal inflammation in ICU patients is yet to be explored. This study aimed to examine whether it is possible to measure FC in randomly selected ICU patients receiving broad-spectrum antibiotics. Further, this study aimed to compare the collection pin method with the pipette method of extraction and to validate if the pipette is the most suitable method for liquid faeces.

Methods
ICU patients with a faecal collection bag were included. Stool samples were collected with a minimum time gap of 24 hours and analyzed for FC using the BÜHLMANN CALEX Cap extraction device and a piston pipette, respectively. Secondary, a validation test for the pipette method of extraction was conducted in liquid faeces.

Results
This study included five ICU patients. FC was detectable in all samples and some indicated low to moderate-grade inflammation. The pipette method displayed on average 127% higher FC values compared to the collection pin. The validation test of the pipette method in liquid faeces displayed a high precision in the low FC concentration (13.1%) and a decreased precision in the high FC concentration (38.5%).

Conclusions
FC was detectable and indicated low to moderate-grade inflammation in most samples. This study further suggests the pipette method as the most suitable method for liquid faeces. However, the optimal approach to collection, analysis and interpretation of FC in ICU patients remains a topic for larger studies.

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1. Aalborg University, Aalborg, Denmark
2. Centre for Clinical Research, North Denmark Regional Hospital, Hjørring, Denmark
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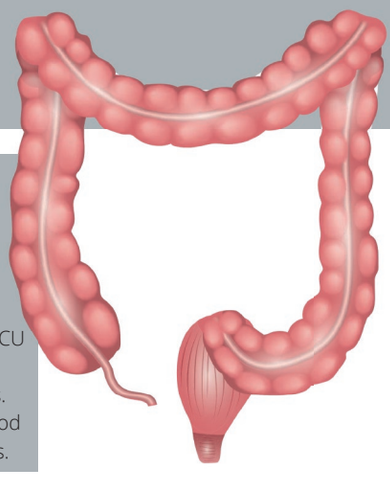
4. Department of Clinical Biochemistry, North Denmark Regional Hospital, Hjørring



Background

Intestinal dysbiosis and broadspectrum antibiotics have been associated with development of low-grade inflammation in the gut. Patients admitted to the ICU are subject to increased risk of developing intestinal inflammation maintaining them in a critical condition. Faecal calprotectin (FC) as a biomarker of intestinal inflammation in ICU patients is yet to be explored. This study aimed to examine whether it is possible to measure FC in randomly selected ICU patients receiving broad-spectrum antibiotics. Further, this study aimed to compare the collection pin method with the pipette method of extraction and to validate if the pipette is the most suitable method for liquid faeces.

Method

ICU patients with a faecal collection bag were included. Stool samples were collected with a minimum time gap of 24 hours and analyzed for FC using the BÜHLMANN CALEX Cap extraction device and a piston pipette, respectively. Secondary, a validation test for the pipette method of extraction was conducted in liquid faeces.

Results

This study included five ICU patients. FC was detectable in all samples and some indicated low to moderate-grade inflammation. The pipette method displayed on average 127% higher FC values compared to the collection pin. The validation test of the pipette method in liquid faeces displayed a high precision in the low FC concentration (13.1%) and a decreased precision in the high FC concentration (38.5%).

Conclusion

FC was detectable and indicated low to moderate-grade inflammation in most samples. This study further suggests the pipette method as the most suitable method for liquid faeces. However, the optimal approach to collection, analysis and interpretation of FC in ICU patients remains a topic for larger studies.

	Collection day 1				Collection day 2			
Patient	Collection pin (mg/kg)		Mean (mg/kg)	Pipette (mg/kg)	Collection pin (mg/kg)		Mean (mg/kg)	Pipette (mg/kg)
A	559	635	597	2003	484	523	504	2729
B	47	47	47	56	32	35	34	56
C	178	190	184	310	239	99	169	310
C*	98	136	117	285	12	0	6	28
D	669	536	603	806	–	–	–	–
E	351	537	444	595	941	1161	1051	1341

Faecal calprotectin results using the collection pin and pipette method. Samples were collected on two consecutive days in patient A, B and E. One sample was collected from patient D. For patient C samples were collected on day one, four, seven and eight. Means are calculated for the collection pin.
C*: Additional results from patient C.

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The Incidence of Eosinophilic Oesophagitis among Children in North Denmark Region between 2007-2017 is lower than expected and treatment does not live up to international guidelines

Martin Hollænder Nielsen[1], Jacob Holmen Terkelsen[1], Frederik Kramme[1], Kasper Bredal1, Kristian Kraglund[2], Kasper Dalby[3], Søren Hagstrøm[4], Dorte Melgaard[5,6], Anne Lund Krarup[6,7,8]

1. Department of Health Science and Technology, Aalborg University, Aalborg, Denmark
2. Unit of Clinical Biostatistics and Epidemiology, Aalborg University Hospital, Aalborg, Denmark
3. Pediatric Center, Odense, Denmark
4. Department of Pediatrics, Aalborg University Hospital, Aalborg, Denmark
5. Center for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
6. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
7. Department of Acute Medicine and Trauma Care, Aalborg University Hospital, Aalborg, Denmark
8. Department of Gastroenterology, Aalborg University Hospital, Aalborg, Denmark

Background
In the North Denmark Region (NDR), no data is available on the incidence of Eosinophilic Oesophagitis (EoE) among children, while the incidence of EoE among adults has increased following a new biopsy protocol in 2011. The aim of this study is to describe the incidence of EoE in children aged 0-17 in the NDR, and describe diagnostic delay, clinical manifestations, treatment and complications.

Methods
This retrospective, registry based, DanEoE cohort study included 18 children diagnosed with EoE between 2007-2017 in NDR. The medical records of the included children were reviewed with attention to symptoms, referring cause, progress of disease, treatment, symptomatic and histological remission and diagnostic delay.

Results
The median incidence per year (2007-2017) was found to be 0.86/100000 children in NDR aged 0-17. The median diagnostic delay among children was 4 years and 6 months. Sixty percent presented with food impaction at first hospital visit. After initial treatment only one of 18 children achieved symptomatic and histologic remission and had long-term treatment planned afterwards.

Conclusions
The calculated incidence among children was lower than that of similar studies. Combined with poor remission rates and lack of follow-up it is likely that EoE is an underdiagnosed and insufficiently treated disease among children in the NDR, especially among girls, infants and toddlers. Our findings suggest that more knowledge concerning EoE in children could lead to greater incidence, shorter diagnostic delay and more effective treatment.

The Incidence of Eosinophilic Oesophagitis among Children in North Denmark Region between 2007-2017 is lower than expected

Martin Hollænder[1], Jacob Holmen Terkelsen[1], Frederik Kramme[1], Kasper Bredal[1], Kristian Kragholm[2], Kasper Dalby[3], Søren Hagstrøm[4], Dorte Melgaard[4,5], Anne Lund Krarup[6,7,8]

[1]School of Medicine and Health, Aalborg University, [2]Unit of Clinical Biostatistics and Epidemiology, Department of Cardiology, Aalborg University Hospital, [3]Pediatric Center, [4]Department of Pediatrics, Aalborg University Hospital, [5]Center for Clinical Research, North Denmark Regional Hospital, [6]Department of Clinical Medicine, Aalborg University, [7]Department of Acute Medicine and Trauma Care, Aalborg University Hospital, [8]Department of Gastroenterology, Aalborg University Hospital.

Background

In the North Denmark Region (NDR), the incidence of Eosinophilic Oesophagitis (EoE) among adults has increased following a new biopsy protocol in 2011, whereas data on the incidence of EoE among children is lacking.

Aims

To describe the incidence of EoE in children aged 0-17 in the NDR, and describe diagnostic delay, clinical manifestations, treatment and complications.

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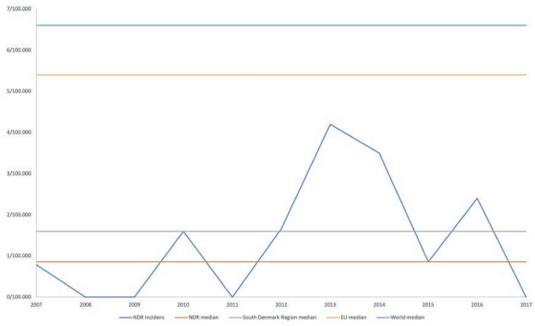
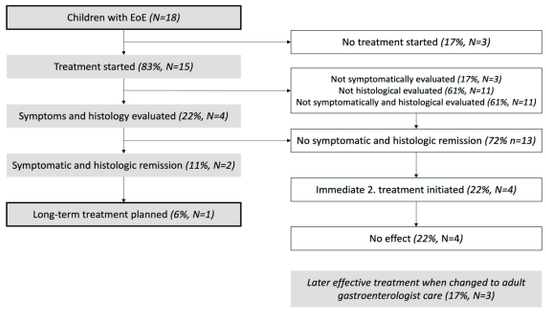
Conclusion

The calculated incidence among children was lower than that of similar studies. Combined with poor remission rates and lack of follow-up it is likely that EoE is an underdiagnosed and insufficiently treated disease among children in the NDR, especially among girls and children aged 0-2 years old. Our findings suggest that more knowledge concerning EoE in children could lead to greater incidence, shorter diagnostic delay and more effective treatment.





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The influence of NSAIDs use on the recurrence of acute diverticulitis among patients in Denmark: a retrospective study

Muthanna Al-Jumaili[1], Katherine Holt[1], Peter Leutscher[2,3]

1. Department of Surgery, North Denmark Regional Hospital, Hjoerring, Denmark
2. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background/aim
Different potential risk factors have been associated with the occurrence of diverticulitis and further complications, including diverticular bleeding, perforation and abscess. Non-steroidal anti-inflammatory drugs (NSAIDs) have been identified as such a potential risk factor for the development of diverticulitis. The aim of this study is to investigate the implications of NSAIDs use on the recurrence of acute diverticulitis in patients requiring hospital admission

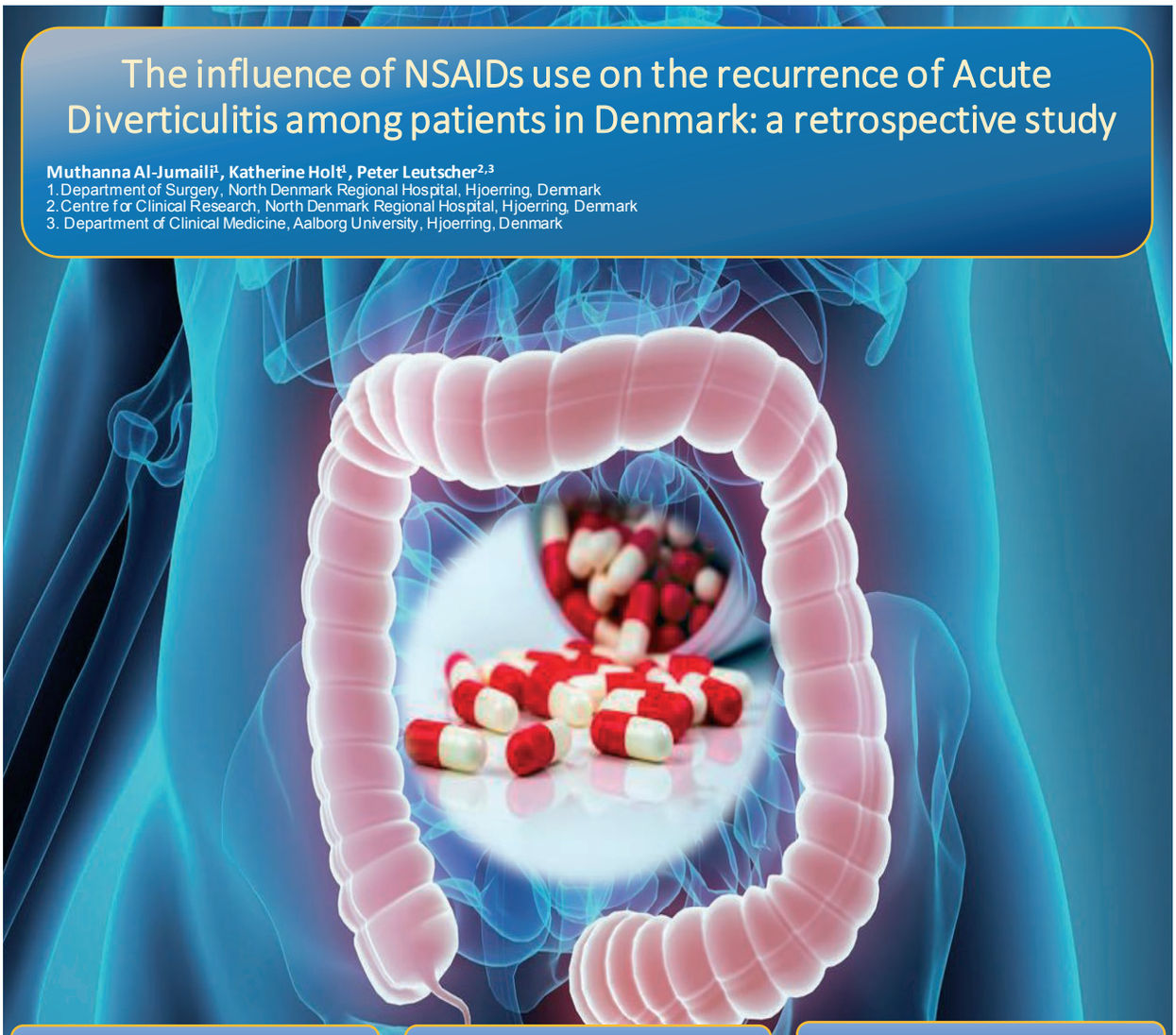
Methods
In this retrospective study, a cohort of patients hospitalized in 2015 with a first-time episode of acute diverticulitis diagnosed with abdominal CT scan, and confirmed with colonoscopy, will be followed up in a five years period. Status of NSAIDs use will be assessed in order to categorize patients as either NSAID users or non-users, respectively, during the follow up period. The incidence of recurrence of acute diverticulitis will then be compared in the two groups.

Results
The results will be presented as they become available and data collection is expected to be completed at end of 2021.

Conclusion
If the incidence of recurrent acute diverticulitis can be reduced with the modification and elimination of the risk factors like NSAID intake, we expect a significant clinical implication on a large patient group in the surgical departments. If this study confirms the harmful effect of NSAID on the diverticulitis, we should carefully consider the potential risks and benefits of using these medications.

The influence of NSAIDs use on the recurrence of Acute Diverticulitis among patients in Denmark: a retrospective study

Muthanna Al-Jumaili[1], Katherine Holt[1], Peter Leutscher[2,3]
1. Department of Surgery, North Denmark Regional Hospital, Hjoerring, Denmark
2. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Medicine, Aalborg University, Hjoerring, Denmark



BACKGROUND/AIM

Different potential risk factors have been associated with the occurrence of diverticulitis and further complications, including diverticular bleeding, perforation and abscess. Non-steroidal anti-inflammatory drugs (NSAIDs) have been identified as such a potential risk factor for the development of diverticulitis. The aim of this study is to investigate the implications of NSAIDs use on the recurrence of acute diverticulitis in patients requiring hospital admission

METHOD

In this retrospective study, a cohort of patients hospitalized in 2015 with a first-time episode of acute diverticulitis diagnosed with abdominal CT scan, and confirmed with colonoscopy, will be followed up in a five years period. Status of NSAIDs use will be assessed in order to categorize patients as either NSAID users or non-users, respectively, during the follow up period. The incidence of recurrence of acute diverticulitis will then be compared in the two groups

PERSPECITVE

If the incidence of recurrent acute diverticulitis can be reduced with the modification and elimination of the risk factors like NSAID intake, we expect a significant clinical implication on a large patient group in the surgical departments. If this study confirms the harmful effect of NSAID on the diverticulitis, we should carefully consider the potential risks and benefits of using these medications

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Infektionsmedicin

23

Immunologisk respons på COVID-19 vaccine blandt patienter med inflammatoriske gigtsygdomme og raske bloddonorer

Sabina Bay Hermansen[1], Karen Buch Lauridsen[2], Kaspar Rene Nielsen[2], Bitten Aagaard[2], Peter Christian Leutscher[3,4], Asta Linauskas[1,4]

1. Reumatologisk Afdeling, Regionshospital Nordjylland, Hjørring
2. Klinisk Immunologisk Afdeling, Aalborg Universitetshospital, Aalborg
3. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
4. Klinisk Institut, Aalborg Universitet, Aalborg

Baggrund
Der er under virusudbruddet med SARS-CoV-2 fundet, at patienter med inflammatoriske gigtsygdomme (IRD) er i højere risiko for et alvorligt sygdomsforløb. Disse patienter var derfor de første der blev tilbudt vaccination mod COVID-19. Flere studier tyder dog på, at patienter med IRD har et nedsat immunrespons på vacciner. Formålet med studiet er at undersøge det immunologiske respons overfor COVID-19-vaccinen. Derudover undersøge prognostiske faktorer associeret til et dårligere immunologisk respons.

Metoder
Studiet er et prospektivt kohorte studie der vil undersøge IgG-antistoftitre hos patienter med IRD sammenlignet med raske bloddonorer. Studiepopulationen udgør voksne uden dokumenteret smitte med SARS-CoV-2 som enten er patienter med IRD som har afgivet blodprøver til Dansk Reuma Biobank, RHN eller raske bloddonorer, tilknyttet Blodbanken i RN. Vi vil benytte blodprøver i biobank og blodbank som baseline og måle IgG-antistoffer 3, 6 og 12 måneder efter første COVID-19-vaccination. Analyserne for antistoffer vil blive udført med ELISA og CMIA på Klinisk Immunologisk Afdeling, AAUH. Der indsamles kliniske oplysninger for patientgruppen via DANBIO for diagnose, varighed, sygdomsaktivitet og medicin. Vaccineinformation indhentes fra FMK.

Resultater
Projektet forventes at påbegynde i efteråret 2021 og forløber frem til foråret 2023. De foreløbige resultater vil blive præsenteret til RNH forskningssymposium.

Konklusion
Der foreligger ingen publicerede studier, som undersøger det immunologiske respons på COVID-19-vacciner hos patienter med IRD. Denne viden vil kunne belyse vaccinernes effekt i denne patientgruppe og bidrage til en mere målrettet vaccinationsplan.

IMMUNOLOGISK RESPONS PÅ COVID-19 VACCINE BLANDT PATIENTER MED INFLAMMATORISKE GIGTSYGDOMME OG RASKE BLODDONORER

Sabina Bay Hermansen[1] , Karen Buch Lauridsen[2] , Kaspar Rene Nielsen[2]
Bitten Aagaard[2], Peter Christian Leutscher[3,4], Asta Linauskas[1,4]

[1]Reumatologisk Afdeling, Regionshospital Nordjylland, Hjørring, Danmark, [2] Klinisk Immunologisk Afdeling, Aalborg Universitetshospital, Danmark
[3]Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring, Danmark, [4]Klinisk Institut, Aalborg Universitet, Danmark

BAGGRUND

Det er påvist, at patienter med inflammatoriske gigtsygdomme (IRD) som smittes med SARS-CoV-2 er i højere risiko for et alvorligt sygdomsforløb(1). Disse patienter har derfor været blandt de første der blev tilbudt vaccination mod COVID-19. Der foreligger flere studier, som peger i retning af at patienter med IRD har et nedsat immunrespons på vacciner(2-3). Det dårligere immunologiske respons på vaccinerne kan forklares på baggrund af dels den autoimmune sygdom, dels den immundæmpende behandling, som er nødvendig for at holde sygdomsaktiviteten i ro (4).

Formålet med studiet er at undersøge det immunologiske respons overfor COVID-19 vaccinen. Derudover undersøge prognostiske faktorer associeret til et dårligere immunologisk respons.

METODE

Studiet er et prospektivt kohorte studie der vil undersøge IgG-antistof titre hos patienter med IRD sammenlignet med raske bloddonorer. Studiepopulationen udgør voksne uden dokumenteret smitte med SARS-CoV-2 som enten er patienter med IRD som har afgivet blodprøver til Dansk Reuma Biobank, RHN eller raske bloddonorer, tilknyttet Blodbanken i RN. Vi vil benytte blodprøver i biobank og blodbank som baseline og måle IgG-antistoffer 3, 6 og 12 måneder efter første COVID-19 vaccination og 2 uger, 3, 6 og 12 måneder efter tredje vaccination. Analyserne for antistoffer vil blive udført med ELISA og CMIA på Klinisk Immunologisk Afdeling, AAUH. Der indsamles kliniske oplysninger for patientgruppen via DANBIO for diagnose, varighed, sygdomsaktivitet og medicin. Vaccineinformation indhentes fra FMK-online.

KONKLUSION

Der foreligger på nuværende tidspunkt ikke viden specifikt om det immunologiske respons overfor godkendte COVID-19 vacciner hos patienter med IRD. Studiet forventes at belyse vacciners effekt i denne patientgruppe og bidrage til en mere målrettet vaccinationsplan.

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Rectal Shedding of SARS-CoV-2 in Danish COVID-19 patients and the general population

Suzette Sørensen[1,2], Julie Niemann Holm-Jacobsen[1], Caspar Bundgaard-Nielsen[1,2], Louise Søndergaard Rold[1,2], Ann Maria Jensen[1], Shakil Shakar[3,4], Marc Ludwig[5], Karina Frahm Kirk[6], Mette Line Donneberg[1,7] *et al.*

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Department of Emergency Medicine, Pandemic unit, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Internal medicine, North Denmark Regional Hospital, Hjoerring, Denmark
5. Department of Emergency medicine, North Denmark Regional Hospital, Hjoerring, Denmark
6. Department of Infectious Diseases, Aalborg University Hospital, Aalborg, Denmark
7. Department of Pediatrics, North Denmark Regional Hospital, Hjoerring, Denmark

Background

Despite great knowledge about SARS-CoV-2 since its outbreak in late 2019, COVID-19 continues to pose a major health issue worldwide. In order to diminish the spread of the virus, it is important to continue mapping out the virus' potential transmission routes. The main routes are through close contact, respiratory droplets, and aerosol particles. However, the rectal shedding of SARS-CoV-2 has also gained interest as a potential route of transmission.
Therefore, this study aimed to investigate the rectal shedding of SARS-CoV-2 and its clinical implications in Danish COVID-19 patients.

Methods

Non-hospitalized and hospitalized children and adults, who had been tested with a pharyngeal COVID-19 test, were included in the study. From each participant, a least one rectal swab was collected and analyzed for SARS-CoV-2 by RT-qPCR. Collection of both pharyngeal and rectal swabs continued from hospitalized adults and COVID-19 positive children until two consecutive negative results were obtained. From questionnaires and medical records, demographic, medical, and biochemical information from the participants were obtained.

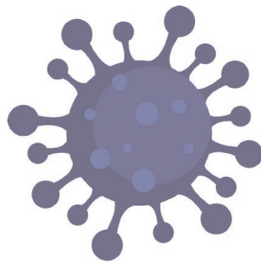
Results

Rectal shedding of SARS-CoV-2 was observed in 28 of 52 (53.8 %) COVID-19 positive children and adults. Seven of the rectal positive patients were followed with sample collection for more than six days, and of these, two continued to test positive in their rectal swabs after pharyngeal swabs had turned negative. The rectal shedding of SARS-CoV-2 continued up to 29 days after the negative conversion of pharyngeal swabs. Demographic, medical, and biochemical information was comparable between the hospitalized rectal positive and rectal negative adult patients, and no correlation was observed between rectal shedding of SARS-CoV-2 and the severity of the disease.

Conclusion

These findings provide evidence of rectal SARS-CoV-2 shedding in Danish COVID-19 patients. The rectal shedding appears to have minimal clinical implications on the infected individuals.

Rectal Shedding of SARS-CoV-2 in Danish COVID-19 patients and in the general population



Julie Niemann Holm-Jacobsen[1], Caspar Bundgaard-Nielsen[1,2], Louise Søndergaard Rold[1], Ann-Maria Jensen[1], Shakil Shakar[3,4], Marc Ludwig[5], Karina Frahm Kirk[6], Mette Line Donneborg[1,7], Julia Helena Vonasek[7], Benjamin Pedersen[8], Louise Thomsen Schmidt Arenholt[1,2,9], Søren Hagstrøm[2,10], Peter Leutscher[1,2], Suzette Sørensen*[1,2]

1 Centre for Clinical Research, North Denmark Regional Hospital, 2 Department of Clinical Medicine, Aalborg University, 3 Department of Emergency medicine, Pandemic unit, North Denmark Regional Hospital, 4 Department of Internal medicine, North Denmark Regional Hospital, 5 Department of Emergency medicine, North Denmark Regional Hospital, 6 Department of Infectious Diseases, Aalborg University Hospital, 7 Department of Pediatrics, North Denmark Regional Hospital, 8 Intensive Care Unit, North Denmark Regional Hospital, 9 Department of Gynecology and Obstetrics, North Denmark Regional Hospital, 10 Department of Pediatrics, Aalborg University Hospital.

*Email: suzette.soerensen@rn.dk

Background

Despite gaining great knowledge about SARS-CoV-2 since its outbreak in late 2019, COVID-19 continues to pose a major health issue worldwide. In order to diminish the spread of the virus, it is important to continue mapping out the potential transmission routes of the virus. The main routes are through close contact, respiratory droplets, and aerosol particles. However, rectal shedding of SARS-CoV-2 has also gained interest as a potential route of transmission. Therefore, this study aimed to investigate the rectal shedding of SARS-CoV-2 and its clinical implications in Danish COVID-19 patients.

Method

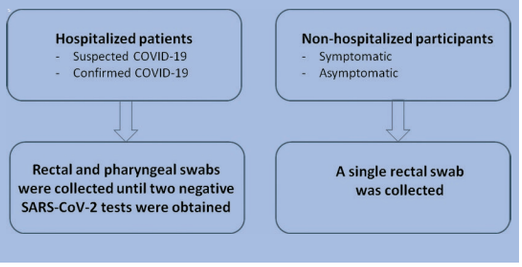
Participants were recruited from the North Denmark Regional Hospital and Aalborg University Hospital.

Rectal swabs or stool swabs were collected either by the participants or by study personnel.

Swabs were analyzed in duplicates for presence of SARS-CoV-2 by RT-qPCR, using primers targeting the E-gene. A sample was considered positive for SARS-CoV-2 if a Ct-value < 40 was obtained. Negative and positive controls were included in each run.

In addition to SARS-CoV-2 testing, different clinical and demographic information was collected through medical records and questionnaires.

The study was approved by the North Denmark Regions Committee on Health Research Ethics (N-20200036).



Results

Table 1: Outline of the included participants and number of SARS-CoV-2 positive participants

	Positive pharyngeal N (%)	Positive rectal N (%/%*)	Total N
Hospitalized adults	41 (78.8)	22 (42.3/53.7)	52
Hospitalized children	1 (33.3)	1 (33.3/100)	3
Non-hospitalized adults	9 (4.3)	4 (1.9/44.4)	211
Non-hospitalized children	1 (12.5)	1 (12.5/100)	8
Total	52 (19)	28 (10.2/53.8)	274

*% = % of participants with a positive pharyngeal swab

In total, 53.8 % of all pharyngeal positive (COVID-19) patients shedded SARS-CoV-2 in the intestines.

SARS-CoV-2 was not detected in rectal swabs from any of the pharyngeal negative participants.

Furthermore, we did not observe any significant differences in demographic and clinical information between the different groups.

Prolonged rectal shedding of SARS-CoV-2 was observed in several of the hospitalized COVID-19 patients (Figure 1), and appeared to be independent on gastrointestinal symptoms.

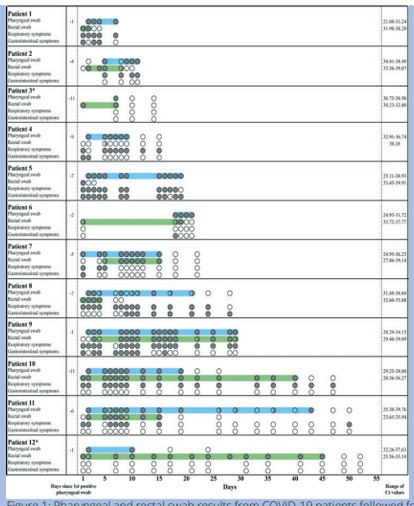


Figure 1: Pharyngeal and rectal swab results from COVID-19 patients followed for more than six days. A grey circle indicates a positive results or presence of a symptom. White circles indicate negative results. The blue colour marks the period of positive pharyngeal swabs, and the green colour marks the period of positive rectal swabs.

Conclusion

This study showed rectal SARS-CoV-2 shedding in more than half of Danish COVID-19 patients. However, we only observed prolonged rectal shedding in a few patients, as opposed to what has been reported in previous studies (1-3). The clinical importance of rectal SARS-CoV-2 shedding is unclear, and long-term consequences, as well as the infectious potential of rectal shedding is still unknown.

Acknowledgements

We would like to thank medical lab technicians Bente Markstrøm Jensen, Anne Sofie Vedsted, and Research Nurse Cecilie Caland, from the Centre for Clinical Research for assistance. We would also like to thank the staff from the Department of Emergency Medicine, the Department of Pathology, and the COVID-19 test centre at the North Denmark Regional Hospital, for their aid in the study. This study was funded by the Novo Nordisk Fonden (NNF20SA0062182).

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Kardiologi og Endokrinologi

25

Diabetes teknologiens indflydelse på livet med diabetes og interaktionen mellem personer med Diabetes Type 1 og diabetessygeplejersken

Anette Vestermark[1], Anne Jensen Severinsen[1], Isabelle Myriam Larsen[2], Mona Kyndi Pedersen[2]

1. Hjertemedicinsk Afdeling, Regionshospital Nordjylland, Hjørring
2. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring

Baggrund
I nutidens behandling af diabetes type 1 anvendes en stor variation af teknologiske hjælpemidler. Personer med diabetes type 1 er i høj grad selvmonitorerende og styrende for deres egen behandling. I deres dagligdag indebærer dette et stort antal beslutninger, hvori der indgår forskellige teknologiske hjælpemidler, hvilket stiller krav til den enkeltes sundhedskompetencer.

For at man i diabetesambulatoriet kan understøtte disse sundhedskompetencer, stiller det ligeledes krav til diabetessygeplejerskens teknologiske færdigheder. I interaktionen mellem diabetessygeplejersken og personen med diabetes, kan de teknologiske aspekter af diabetesbehandlingen tage fokus væk fra samtalen om andre livsproblematikker i livet med type 1 diabetes.

Formål
At beskrive hvordan diabetesteknologien påvirker personer med diabetes type 1 i deres dagligdag og hvorledes denne teknologi påvirker interaktionen med diabetessygeplejersken.

Metode
Der vælges et kvalitativt design med dataindsamling i form af 2 fokusgruppeinterviews med personer med diabetes type 1 tilknyttet voksen diabetesambulatoriet med minimum 2 års diabetes erfaring, som benytter sig af Flash Glucose Måler, pumpe og/eller sensor.

Der anvendes en temaopdelt interviewguide opbygget med inspiration fra litteratur om sundhedskompetence.

Materialet vil blive analyseret ud fra en hermeneutisk analyseramme.

Resultater
Der foreligger endnu ikke resultater af undersøgelsen.

Konklusion/perspektivering:
Det forventes, at resultaterne fra undersøgelsen vil kunne bibringe viden om og inspirere til mulige indsatser i udvikling og opbygning af sundhedskompetence og dermed til en øget livskvalitet hos personer med diabetes type 1.

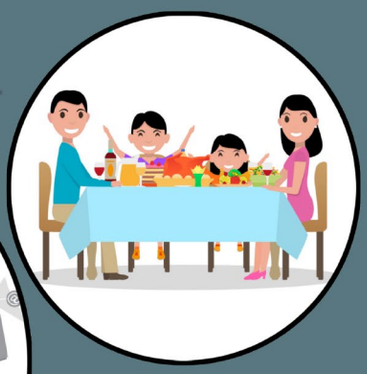
Dagligdagens LOOP for en person med diabetes type 1

En kvalitativ undersøgelse af teknologiens indflydelse på dagligdagen for personer med type 1 diabetes

Anette Vestermark[1], Anne Severinsen[1], Isabelle M. Larsen[2], Mona Kyndi Pedersen[2]

[1]Afdeling for Hjerte, Diabetes og Hormonsygdomme, Regionshospital Nordjylland, Hjørring, Danmark

[2]Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring, Danmark



Baggrund:
I nutidens behandling af diabetes type 1 anvendes en stor variation af teknologiske hjælpemidler. Personer med diabetes er i høj grad selvmonitorerende og styrende for deres egen behandling.
I interaktionen mellem diabetessygeplejersken og personen med diabetes, kan de teknologiske aspekter af diabetesbehandlingen tage fokus væk fra samtalen om andre livsproblematikker i livet.

Formål:
At beskrive hvordan diabetesteknologien påvirker personer med diabetes type 1 i deres dagligdag og hvorledes denne teknologi påvirker interaktionen med diabetessygeplejersken.

Metode:
Der vælges et kvalitativt design, hvor der vil blive anvendt en pilottestet temaopdelt interviewguide i to fokusgruppeinterviews med op til 8 patienter til dataindsamling. Patienterne skal have minimum 2 års diabeteserfaring og benytter sig af Flash Glucose Måler, pumpe og/eller sensor.
Vi forventer dataindsamlingen vil foregå i foråret 2022.

Perspektivering:
Det forventes, at resultaterne fra undersøgelsen vil kunne bibringe viden om og inspirere til mulige indsatser i udviklingen af interaktionen mellem personen med diabetes type 1 og diabetessygeplejersken.

Kontakt:
Anette Vestermark
a.vestermark@rn.dk

Anne Severinsen
anjes@rn.dk

CKF | CENTER FOR KLINISK FORSKNING Regionshospital Nordjylland

REGION NORDJYLLAND – i gode hænder

26

Okkult cancer ved førstegangs venøs tromboembolisme sygdom

Tobias Valdemar Broe Knudsen[2,3], Kristian Hay Kragholm[1,2], Peter Bisgaard Stæhr[2], Steen Hylgaard Jørgensen[1,2], Henrik Vadmann[1,2]

1. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
2. Hjertemedicinsk Afdeling, Regionshospital Nordjylland, Hjørring
3. Klinisk Institut, Aalborg Universitet, Aalborg

Baggrund

Venøs tromboembolisme (VTE), herunder dyb venetrombose (DVT) og lungeemboli (LE) er den tredjehyppigste kardiovaskulære dødsårsag, efter akut myokardieinfarkt og apopleksi i Danmark. Disponerende faktorer for VTE er især nylig operation, immobilisation, graviditet, men adskillige øvrige faktorer disponerer ligeledes. Malign sygdom er en selvstændig risikofaktor for VTE, men rutinemæssig malignitets udredning anbefales kun ved klinisk mistanke om malign sygdom baseret på anamnese (organspecifikke og generelle symptomer på mulig systemisk/malign lidelse), objektiv undersøgelse (mammae, testes, prostata, lymfeknuder, etc.), biokemi (levertal, hæmatologi, evt. PSA og cancermarkører) og røntgen/CT af thorax. Ved VTE hos patienter med tidligere malign sygdom overvejes risikoen for recidiv. Vi savner lokale data for hyppigheden af malign sygdom hos patienter, som er udredt og behandlet for VTE i Region Nordjylland. Projektet har til formål at evaluere kvaliteten og sikkerheden af den udrednings- og behandlingsmæssige aktivitet omkring VTE, der finder sted i Nordjylland, og afsøge muligheden for yderligere forbedringer.

Metode

Gennemgang af registerdata for perioden 2015 til 2000 fra afdelingen for Hjertemedicin ved Regionshospital Nordjylland. Data for diagnose, blodprøver, medicin, procedurekoder og cpr-register inddrages. Dataudtræk skal anvendes til at opgøre forekomsten af okkult cancer efter VTE tilfælde.

Perspektiver

Projektet skal undersøge forekomsten af okkult cancer efter VTE-tilfælde ved Regionshospital Nordjylland. Herunder vil projektet analysere cancer samt analyse af biokemiske markører som måske korrelerer til udvikling af senere cancer.

Overser vi cancer hos patienter med lungeemboli og DVT?

Tobias Valdemar Broe Knudsen[1], Kristian Hay Kragholm[2], Peter Bisgaard Stæhr[3], Steen Hylgaard Jørgensen[4], Henrik Vadmann[5]

[1]Kardiologisk afd. Regionshospital Nordjylland, Hjørring, og Aalborg Universitet, [2]Kardiologisk afd. Aalborg universitetshospital, [3]Kardiologisk afd. Regionshospital Nordjylland, Hjørring, [4]Kardiologisk afd. Regionshospital Nordjylland, Hjørring og Center for Klinisk Forskning, [5]Kardiologisk afd. Regionshospital Nordjylland, Hjørring

Okkult cancer ved venøs tromboembolisme sygdom

Baggrund

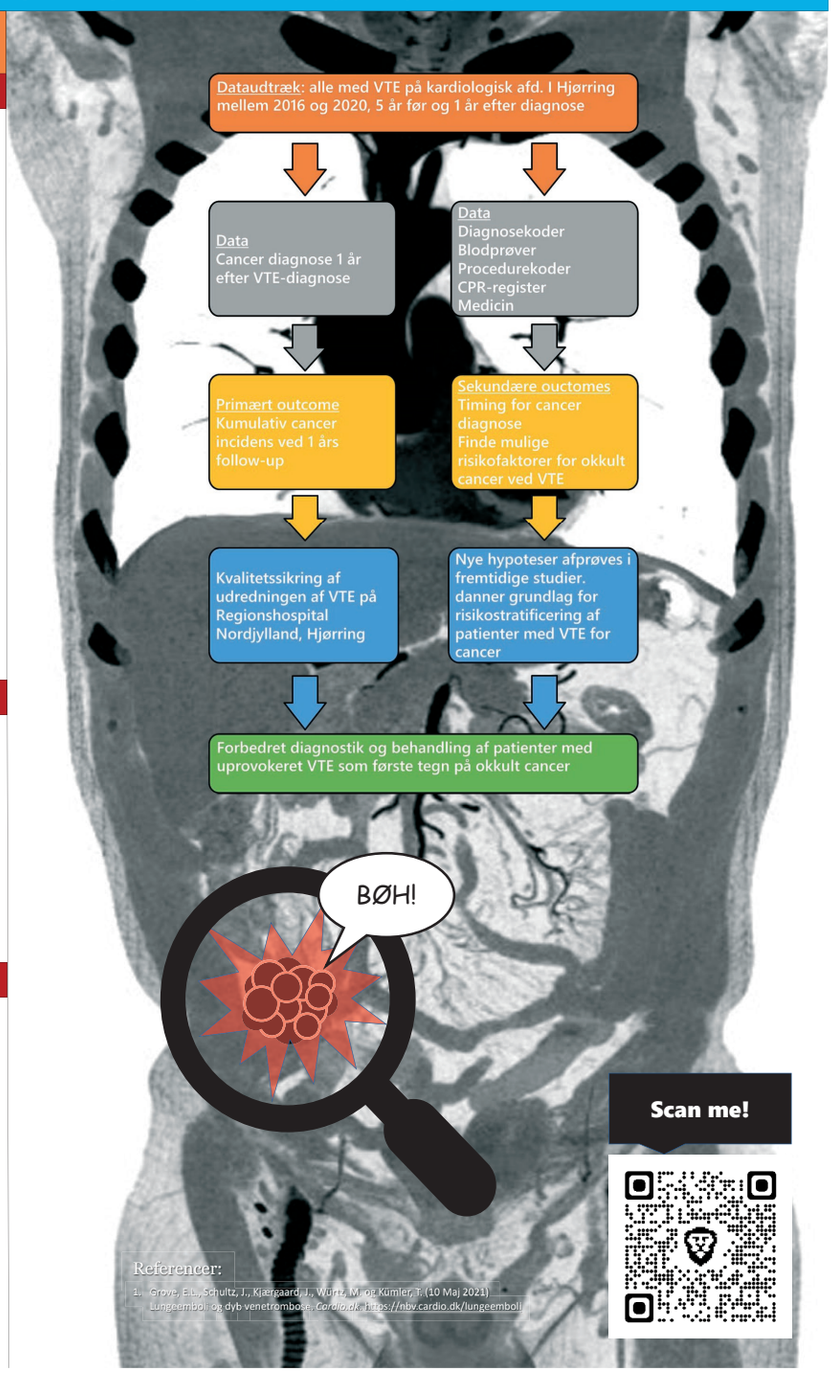
- Venøs tromboembolisme (VTE), herunder dyb venetrombose (DVT) og lungeemboli (LE) er **hyppig** i Danmark og har en **30-dagesmortalitet på 15%.**[1]
- **Disponerende faktorer** for VTE er især nylig operation, immobilisation, graviditet, men adskillige øvrige faktorer disponerer ligeledes.[1]
- **Malign sygdom** er en selvstændig risikofaktor for VTE, men rutinemæssig malignitetsudredning anbefales kun ved klinisk mistanke om malign sygdom baseret på:
- **Anamnese** (organspecifikke og generelle symptomer på mulig systemisk/malign lidelse)
- **Objektiv undersøgelse** (mammae, testes, prostata, lymfeknuder, etc.),
- **Biokemi** (levertal, hæmatologi, evt. PSA og cancermarkører) og røntgen/CT af thorax.
- Ved VTE hos patienter med **tidligere malign sygdom** overvejes risikoen for recidiv.[1]

Metoder

- Gennemgang af **registerdata** for perioden okt. 2016 til okt. 2020 fra afdelingen for Hjertemedicin ved Regionshospital Nordjylland.
- **Data** for diagnose, blodprøver, medicin, procedurekoder og cpr-register inddrages.
- Dataudtræk skal anvendes til at **opgøre forekomsten af okkult cancer** efter VTE tilfælde.

Perspektiver

- Projektet skal undersøge **forekomsten af okkult cancer efter VTE-tilfælde** ved Regionshospital Nordjylland.
- Herunder vil projektet analysere cancer samt **analyse af biokemiske markører** som måske korrelerer til udvikling af senere cancer



Referencer:

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AALBORG UNIVERSITET

27

Risikofaktorer for at udvikle apoplexia cerebri efter DC-kardiovertering af atrieflimmer

Vilde Katinka Davidsen[2,3], Mikkel Kjeldgaard[2,3], Nabil Al-Janabi[2,3], Kristian Hay Kragholm[1,2], Peter Bisgaard Stæhr[2], Steen Hylgaard Jørgensen[1,2], Henrik Vadmann[1,2]

1. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
2. Hjertemedicinsk Afdeling, Regionshospital Nordjylland, Hjørring
3. Klinisk Institut, Aalborg Universitet, Aalborg

Baggrund

Atrieflimren er en af de hyppigste hjertesygdomme i Danmark. Årligt diagnosticeres mere end 18.000 nye tilfælde og ca. 120.000 danskere har atrieflimren. Atrieflimren udgør ca. 10 % af kardiologiske indlæggelser og 2 % af de samlede sundhedsudgifter. Atrieflimren øger især risikoen for trombo-emboliske komplikationer og man mener at atrieflimren er årsag til 25 % af alle tilfælde med apopleksi. En central del af behandlingen udgøres af elektrisk kardiovertering (DC). I klinisk praksis ligger komplikationsraten ved DC-konvertering i størrelsesordenen 8% inklusive lette komplikationer. Alvorlige komplikationer i form af arytmi eller tromboemboli menes at optræde ved 1% af elektive DC-konverteringer. Vi forsøger at minimere risikoen for tromboemboli (apopleksi cerebri) ved at håndhæve at patienter skal være i korrekt doseret AK-behandling i mindst 3 uger forud for DC-konvertering og alternativt skal der foreligge en transøsofageal ekkokardiografi som udelukker trombemateriale i venstre atrium. Patienterne udskrives typisk 2 timer efter DC-konvertering og oftest ser vi kun patienten i tilfælde af recidiv af atrieflimren. Projektet har til formål at evaluere kvaliteten og sikkerheden af den DC-konverteringsaktivitet, der finder sted i Nordjylland, og afsøge muligheden for yderligere forbedringer.

Metode

Gennemgang af registerdata for perioden 2015 til 2000 fra afdelingen for Hjertemedicin ved Regionshospital Nordjylland. Data for diagnose, blodprøver, medicin, procedurekoder og cpr-register inddrages. Dataudtræk skal anvendes til at opgøre forekomsten af apoplexia cerebri efter DC-konvertering for atrieflimren.

Perspektiver

Projektet skal undersøge forekomsten af trombo-emboliske komplikationer efter DC-kardiovertering for atrieflimren ved Regionshospital Nordjylland. Herunder vil projektet analysere hvilke risikofaktorer som øger risikoen for udvikling af apopleksi cerebri.

REGIONSHOSPITAL NORDJYLLAND
– i gode hænder

AALBORG UNIVERSITY
- Denmark

Complications associated with defibrillating cardioversion of atrial fibrillation and -flutter – a Danish regional quality-assurance study

Forfatterskab
[1]Regional Hospital of Northern Jutland, 9800 Hjoerring, Denmark , [2]Aalborg University, 9200 Aalborg, Denmark

Background

- Atrial fibrillation and –flutter causes major health issues for patients and society
- They present a frequent cause of stroke
- Hence, treatment consist of prophylaxis anticoagulants until cardioversion to sinus rythm.
- Tromboembolic elements in the atria can develop to stroke during defibrillating cardioversion
- Guidelines suggest prophylactic anticoagulantia, or evaluation with transeosophageal ultrasound of the left atrium, prior to treatment.

Aim of the study

Evaluation of post-procedural ECV prevalence of death or sequelae due to thromboembolic events in association to different variates and comorbidities.

Methods

A Danish Regional retroperspective register study

Through the Danish National Patient Registry, we identified: All who underwent defibrillating cardioversion of atrial fibrilation and –flutter at age 18 years or older, and did not migrate during the 4 week follow-up period.

Data consist of procedures during the period 1. January 2016 to 31. December 2020 at the Danish Regional Hospital of Northern Jutland, Hjoerring.

Exclusion criteria were defined as patients without a permanent Danish civil registration number, or who migrated from Denmark in the follow-up period.

All data management and analyses were performed by using SAS 9.4 and R Statistical Software version 3.5.0

Statistical analysis

The data was presented either as categorical or continuous data. Categorical variables were presented as counts and percentages, and continuous variables as median, 25th and 75th percentiles.

All non-normally distributed continuous variables were evaluated through Kruskal-Wallis test. For differences across categorical variables, the Chi^2 test was used.

The individual association of different risk factors to stroke incidence within four weeks were evaluated using Cox-proportional-hazards-model.

Using a multivariable analysis, it was possible to compare concomitant variables. The multivariable analysis was adjusted for age, sex, atrial fibrillation and –flutter, type of anticoagulant drug, recent TEE, ischemic heart disease, heart failure, cardiac arrest, hypertension, diabetes mellitus, valvopathies and congenital heart diseases .

Results

Still pending, no data available

Conclusion — key findings

Pending

Clinical implication

28

Hvilken viden, drivkraft og relationer behøver unge med Type 1 diabetes for at bedre deres sundhedskompetencer – et kvalitativt studie

Margit Oien Nielsen[1], Hanne Frejlev[2], Annette Vestermark[2], Jakob Dal[3,4], Anna Pietraszek[4, 5], Dorte Melgaard[3,6]

1. Diætistenheden, Regionshospital Nordjylland, Hjørring
2. Hjertemedicinsk Afdeling, Regionshospital Nordjylland, Hjørring
3. Klinisk Institut, Aalborg Universitet, Aalborg
4. Endokrinologisk Afdeling, Aalborg Universitetshospital, Aalborg
5. Steno Diabetes Center Nordjylland, Aalborg
6. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring

Abstract
Formålet med dette projekt er at afdække hvilke behov unge med type 1-diabetes, der lever uafhængigt, er nødt til at øge deres sundhedsmæssige færdigheder.

Baggrund
Livet om ung udeboende voksen med Type 1 diabetes kan være en kritisk, ustabil og udfordrende periode, som ofte kan påvirke til begrænsede sundhedskompetencer hos den unge. Dette kan give udfordringer i forhold til uddannelse, job, sport, kost og sociale netværk. Formålet med dette studie er at afdække hvilke behov for viden, drivkraft og relationer, som unge udeboende med Type 1 diabetes efterspørger for at styrke deres sundhedskompetencer.

Metode
To fokusgruppeinterviews med ni unge udeboende personer med Type 1 diabetes i alderen 18-24 år blev gennemført i maj måned 2021. Ved interviewet blev anvendt temainterviewguide. Deltagerne er tilknyttet diabetesambulatoriet på Regionshospital Nordjylland. Analysen tog udgangspunkt i Malteruds systematiske tekstkondensering.

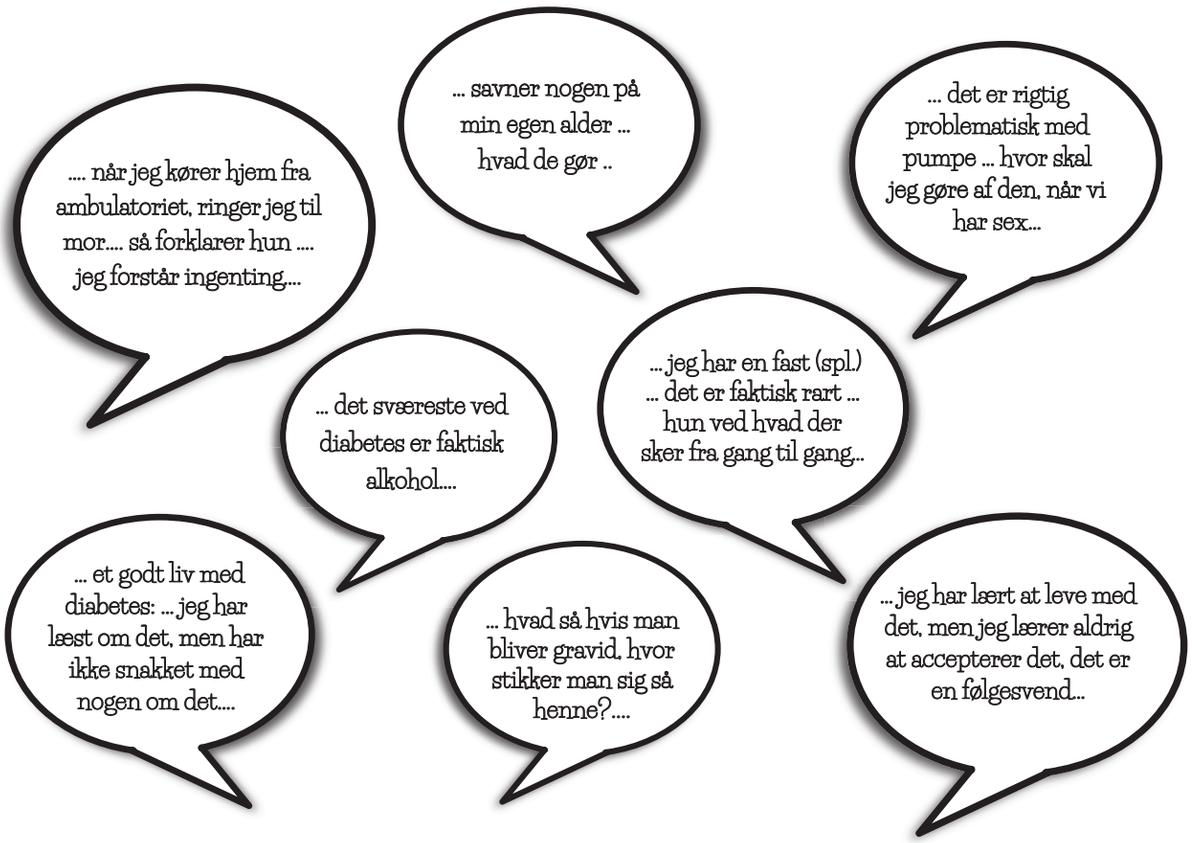
Resultat
Unge udeboende voksne med Type 1 diabetes savner viden om, hvorledes alkohol påvirker deres blodsukre, hvordan diabetes indvirker på seksualitet, graviditet og arvelighed samt en øget indsigt i og forståelse af blodprøvesvar og blodsukkermålinger. De gav desuden udtryk for følelsen af dårlig samvittighed og angst i relation til at have diabetes. I forhold til kontakten til diabetesambulatoriet ønsker de unge kontinuerlige forløb med mulighed for faste kontaktpersoner og mere inddragelse af pårørende. Desuden efterspurgte de unge mulighed for at møde andre unge med diabetes og udveksle erfaring om diabetes

Konklusion
Unge udeboende med Type 1 diabetes efterspørger viden om alkohol, seksualitet, indsigt i og forståelse af blodprøvesvar/blodsukker, fast kontaktperson, yderligere inddragelse af pårørende og muligheden for at mødes med andre jævnaldrende med diabetes.

Det taler vi heller ikke om...

Margit Oien Nielsen[1] • Hanne Frejlev[2] • Anette Vestermark[2] • Jakob Dal[3,4] • Anna Pietraszek[4,5] • Dorte Melgaard[3,6]

1. Diætistenheden, Regionshospital Nordjylland, Hjørring, Danmark
2. Afdeling for hjerte, diabetes og hormonsygdomme, Regionshospital Nordjylland, Hjørring, Danmark
3. Klinisk Institut, Aalborg Universitet, Aalborg, Danmark
4. Endokrinologisk afdeling, Aalborg Universitetshospital, Aalborg, Danmark
5. Steno Diabetes Center Nordjylland, Danmark
6. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring, Danmark



Baggrund

Livet som ung udeboende voksen med Type 1 diabetes kan være en kritisk, ustabil og udfordrende periode, som ofte kan påvirke til begrænsede sundhedskompetencer hos den unge. Dette kan give ud fordringer i forhold til uddannelse, job, sport, kost og sociale netværk. Formålet med dette studie er at afdække hvilke behov for viden, motivation og relationer, som unge udeboende med Type 1 diabetes efterspørger for at styrke deres sundhedskompetencer.

Metode

To fokusgruppeinterviews med ni unge udeboende personer med Type 1 diabetes i alderen 18-24 år blev gennemført i maj måned 2021. Ved interviewet blev anvendt temainterviewguide. Deltagerne er tilknyttet diabetesambulatoriet på Regionshospital Nordjylland. Analysen tog udgangspunkt i Malteruds systematiske tekstkondensering.

Resultater

Unge udeboende voksne med Type 1 diabetes savner viden om, hvorledes alkohol påvirker deres blodsukre, hvordan diabetes indvirker på seksualitet, graviditet og arvelighed samt en øget indsigt i og forståelse af blodprøvesvar og blodsukkermålinger. De gav desuden udtryk for følelsen af dårlig samvittighed og angst i relation til at have diabetes. I forhold til kontakten til diabetesambulatoriet ønsker de unge kontinuerlige forløb med mulighed for faste kontaktpersoner og mere inddragelse af pårørende. Desuden efterspurgte de unge mulighed for at møde andre unge med diabetes og udveksle erfaring om diabetes

Konklusion

Unge udeboende med Type 1 diabetes efterspørger viden om alkohol, seksualitet, indsigt i og forståelse af blodprøvesvar/blodsukker, fast kontakt-person, yderligere inddragelse af pårørende og muligheden for at mødes med andre jævnaldrende med diabetes.

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AALBORG UNIVERSITETSHOSPITAL – i gode hænder

STENO DIABETES CENTER NORDJYLLAND

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Aspects of health literacy and cognitive function in adults with diabetic foot ulcers in Region North Denmark

Morten Bilde Simonsen[1], Mona Kyndi Pedersen[1,2,] Isabelle Myriam Larsen[1,2,3], Peter Leutscher[1,2], Niels Ejskjær[3]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Steno Diabetes Center North Denmark, Aalborg, Denmark

Background
One of the most devastating complications arising from diabetes is diabetic foot ulceration (DFU) which can lead to lower limb amputations. Studies have documented recurrence rates are as high as 40% in the first year after an episode. One possible explanation for the high reoccurrence is that many precipitating factors that caused the DFU in the first place, such as peripheral neuropathy, are persisting and therefore still not resolved after the first DFU episode. Consequently, preventive foot self-care practice is important to prevent future episodes, which places great demands on self-care knowledge, understanding and compliance of the patients. A previous Danish study found that patients with diabetes struggle to understand health information. In addition, diabetes has also been shown to impair neurocognitive function. Therefore, the overall aim of this project is to investigate the interaction between health literacy, neurocognitive function, knowledge and practice of foot self-care among patients with diabetes with their first episode of a DFU.

Methods
The present study aims at recruiting participants with diabetes and a recent DFU incidence (n=30) and a control group with diabetes without neuropathy and no previous DFU incidence (n=10). Health literacy, neurocognitive function, knowledge and practice of foot self-care will be assessed using questionnaires, interviews, and standardized neurocognitive tests.

Results
Data collection is expected to finish by the end of December.

Conclusion
The project will lay a solid foundation for future advancements in diabetic foot care by investigating the interplay between health literacy, cognitive function, knowledge and practice of foot self-care.

Aspects of health literacy and cognitive function in adults with diabetic foot ulcers

*MB Simonsen[1], MK Pedersen[1], IM Larsen[1,2,] P Leutscher[1], N Ejskær[2]

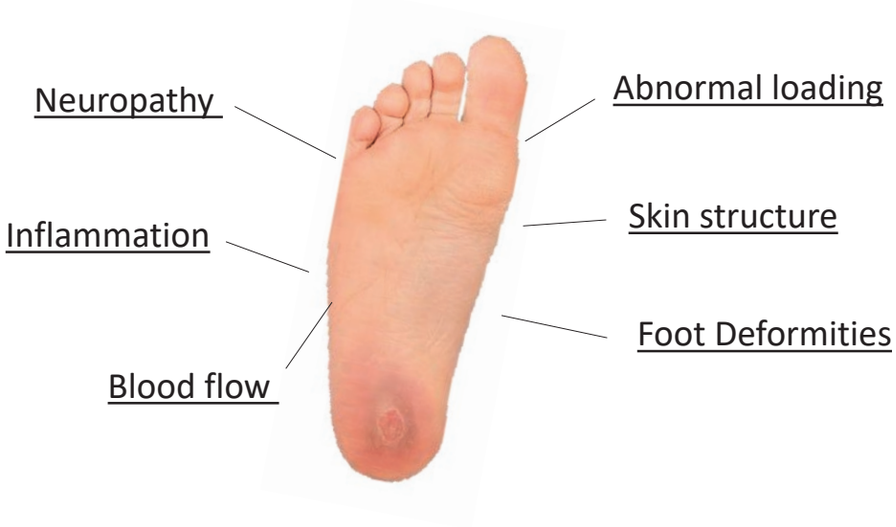
[1]Centre for Clinical Research, North Denmark Regional Hospital
[2] Steno diabetes Center Northern Denmark Denmark

Morten.Simonsen@rn.dk

A diabetic foot ulcer is the initial event in more than 85% of major amputations

Diabetic foot ulcer recurrence rates are as high as 40% in the first year after an episode

Precipitating factors persist after wound healing



Preventive foot self-care practice is therefore important to prevent future episodes, which places great demands on self-care knowledge, understanding and compliance for the patients

This project will investigate the interplay between health literacy, cognitive function, knowledge and practice of foot self-care among adults with diabetic foot ulcers.

NORTH DENMARK REGIONAL HOSPITAL

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Biomarkers as predictors of chronic heart failure in patients with type 2 diabetes

Steen Hyldgaard Jørgensen[1,2], Sura Adnan Raheem[2], Peter Bisgaard Stæhr[2], Berit Linde[2], Isabelle Myriam Larsen[1], Peter Hindersson[3], Peter Leutscher[1,4]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Cardiology, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Biochemistry, North Denmark Regional Hospital, Hjoerring, Denmark
4. Clinical Institute, Aalborg University, Aalborg, Denmark

Background
Cardiovascular disease, including chronic heart failure, is highly prevalent in patients with T2D. Cardiovascular disease may be silent in these patients and time to diagnosis is often delayed. Studies suggest that simple biomarkers can predict which patients will develop chronic heart failure. The aim of the present study is to investigate whether biomarkers such as NT-proBNP, troponin, hs-CRP and albuminuria combined with ECG and echocardiograpy can predict the risk of developing chronic heart failure in patients with T2D.

Methods
A cohort study of 500 patients with T2D with no history of heart disease are followed for five years. Tests will include: nt-proBNP, troponin, hs-CRP, albuminuria, eGFR as well as ECG, Echocardiography and assessment of physical capacity.

Results
The study started inclusion of patients by July 2021. A total of 14 patients has been enrolled, 8 females/6 males. The Mean age was 65 ± 6 years. Mean body mass index was 29 kg/m2. Mean left ventricular ejection fraction was 58 ± 3 %, E/A ratio was 1 ± 0.3 and, e/'e was 11 ± 2 and the mean left atrium volume index was 31 ± 6 ml/m2. The mean NT-proBNP level was 148 ± 139 ng/l and the mean troponin I level was 16 ± 26 ng/l.

Conclusion
At inclusion, two (14%) had levels of troponin I and NT-proBNP above recommended cutoff. We hope the next five years will show if we can improve time to diagnosis in patients at particular risk of developing chronic heart failure.

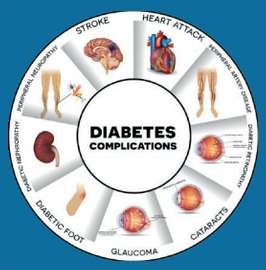
Can we predict heart failure in patients with type 2 diabetes?

Steen Hylgaard Jørgensen, Sura adnan raheem, Peter bisgaard stæhr, berit linde, isabelle myriam larsen, peter hindersson & Peter Leutscher

Background

Patients with type 2 diabetes are two to four times more likely to develop heart failure

Diagnosis may be delayed because cardiovascular disease is often silent in patients with type 2 diabetes.



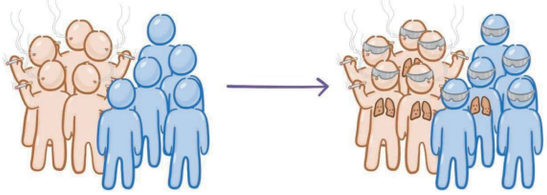
Purpose

Can simple blood tests, ECG and echocardiography predict the risk of developing chronic heart failure in patients with type 2 diabetes without symptoms of cardiovascular disease?

Methods

Prospective cohort of 500 patients with type 2 diabetes and no history of heart disease

2021 → 2027



Methods

Blood test: NT-proBNP, hs-CRP, eGFR, troponin I

Echocardiography

ECG

6-minute hall walk test

Preliminary results

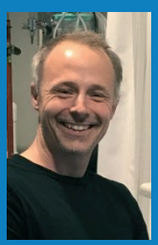
- 14 patients (8 female / 6 male)
- Mean age of 65 ± 6 years
- Mean LVEF: 58 ± 3 %
- Mean NT-proBNP: 148 ± 139 ng/L
- Two patients (14 %) had levels above the recommended cutoff

Conclusion

We hope that this study will improve time to diagnosis in patients at particular risk of developing chronic heart failure

We hope to identify predictors of chronic heart failure in patients with type 2 diabetes

These findings may lead to better treatment of patients with type 2 diabetes in the future



Contact the author
Steen Hylgaard Jørgensen
E-mail: s.joergensen@rn.dk
Phone: 22621137

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Metabolic changes in the healthy human heart during adenosine stress test

Steen Hylgaard Jørgensen[1,2,3], Peter Bisgaard Stæhr[2], Christoffer Lausten[4], Henrik Wiggers[3]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Cardiology, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Cardiology, Aarhus University Hospital, Skejby, Denmark
4. The MR Research Centre, Aarhus University, Skejby, Denmark

Background
Hyperpolarized (HP) [1-^{13}C]pyruvate cardiac magnetic resonance (CMR) imaging can detect metabolism beyond glucose uptake by visualization of the intracellular conversion of pyruvate to either lactate or bicarbonate depending on the prevailing metabolic state. The aim of the present study was to examine feasibility and safety of HP [1-^{13}C]pyruvate CMR during an adenosine stress test in the healthy human heart.

Methods
Six healthy volunteers underwent cine CMR and HP [1-^{13}C]pyruvate CMR at rest and during an adenosine stress test. Cardiac function, semi-quantitative perfusion and metabolic conversion rate constants were measured at rest and during stress.

Results
Adenosine stress testing combined with HP [1-^{13}C]pyruvate CMR was feasible and safe. All six participants had successful rest and stress examinations. Myocardial perfusion increased significantly during adenosine stress and conversion rate constants of pyruvate to lactate increased significantly from 0.01± 0.009 sec-1 to 0.02 ± 0.10 sec-1 ($p = 0.04$) and pyruvate to bicarbonate increased significantly from 0.004 ± 0.004 sec-1 to 0.012 ± 0.007 sec-1 ($p=0.008$).

Conclusion
We present the first human data on combined adenosine stress test and HP [1-^{13}C]pyruvate CMR. In the healthy human heart, adenosine stress test results in increased flux through key enzymatic metabolic steps. Results indicate that the carbohydrate oxidation is increased in the healthy human heart during cardiac stress.

First-in-man

A journey inside the human heart

Hyperpolarized CMR and adenosine stress

Steen Hylgaard Jørgensen, Peter Bisgaard Stæhr, Christoffer Laustsen & Henrik Wiggers

Background 1

Despite advanced imaging techniques, the selection of patients for revascularization remains a highly contested issue in both chronic coronary artery disease and chronic heart failure.

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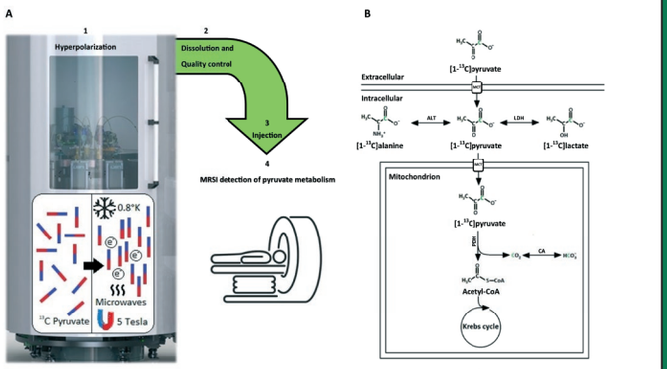
- The heart use glucose to produce energy for contraction
- The healthy heart breaks down glucose into pyruvate
- Pyruvate is oxidized to produce energy and HCO_3^-
- Poor blood supply will lead to ischemia and pyruvate will be reduced to lactate

Purpose 3

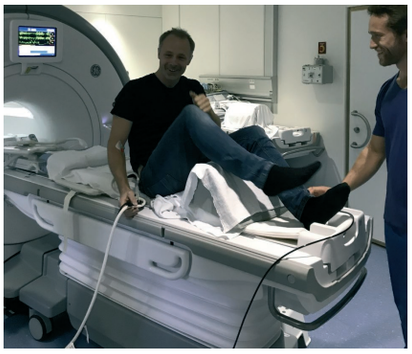
Can cardiac magnetic resonance imaging (CMR) detect pyruvate metabolism during an adenosine stress test in the human heart?

Methods 4



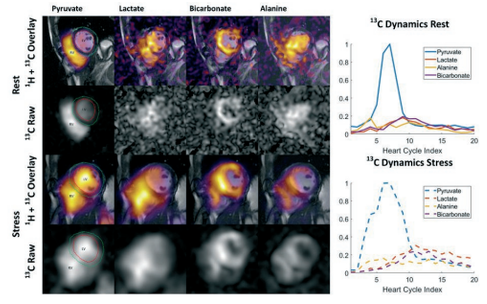
Pyruvate enriched with the stable carbon-13 isotope in the first position ([1-^{13}C]pyruvate) is magnetized (hyperpolarized) using a strong magnetic field, microwaves and free electrons at 0.8°K and then injected into the patient. Magnetic resonance spectroscopic imaging (MRSI) can then detect pyruvate metabolism.

5



- Healthy human volunteers underwent Hyperpolarized [1-^{13}C] pyruvate CMR at rest and during an adenosine stress test.
- Semi-quantitative assessment of first-pass myocardial [1-^{13}C]pyruvate perfusion and metabolism was assessed.

Results 6



- Six healthy volunteers were studied (2 female / 4 male)
- Myocardial [1-^{13}C]pyruvate perfusion was significantly increased during stress
- The conversion of pyruvate to lactate was increased by 82 %
- The conversion of pyruvate to bicarbonate was increased by 200%

Conclusion 7

The present study represents the first-in-human non-invasive, real-time, *in-vivo* investigation of adenosine stress-induced metabolic changes in the healthy human heart using hyperpolarized [1-^{13}C]pyruvate CMR imaging.

The study confirms that it is feasible and well tolerated in human subjects to add an adenosine stress test to hyperpolarized [1-^{13}C]pyruvate CMR imaging.

The study demonstrates increased myocardial carbohydrate oxidation during low to moderate cardiac stress.

Contact the author

Steen Hylgaard Jørgensen
E-mail: s.joergensen@rn.dk
Phone: 22621137

KIRURGI

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Flow in an acute abdominal surgical department: an observational study

Alessio Monti[1], Maria Beatriz Alexandre Quaresma[2], Ahmed Jamal Abbas Hamad[2], Miranda Elisabeth K Ocklind[1], Laura Hauge Kristensen[2], Lærke Storgaard Duerlund[2], Søren Lundbye-Christensen[3], Lone Schmidt Sørensen[1], Ole Thorlacius-Ussing[1] *et al.*

1. Department of Surgical Gastroenterology, Aalborg University Hospital, Denmark
2. Department of Surgical Gastroenterology, North Denmark Regional Hospital, Hjoerring, Denmark
3. Unit of Clinical Biostatistics, Aalborg University Hospital, Denmark

Background
A prompt surgical evaluation can improve patient's morbidity and mortality in abdominal surgical emergencies. We designed a prospective observational study to describe the flow and hospital stay of acute surgical patients at Aalborg University Hospital.

Methods
All acute abdominal surgical patients hospitalised between 1st February and 31st March 2020 were included. Triage groups, Early Warning Score (EWS) time, length of stay in the emergency department, time to surgery, and time to clinical decision were prospectively registered. Baseline variables were reported as mean and standard deviation or as number and percentages, as appropriate. A linear regression to compare the mean time to clinical decision in the triage groups was conducted.

Results
After applying inclusion and exclusion criteria, 596 patients were included in data analysis. The mean interval from EWS to clinical decision (minutes) for the entire population was 395 ± 258 and in the four groups (i.e. green, yellow, orange, red) were 402 ± 244, 413 ± 293, 338 ± 181, and 350 ± 219 respectively).

The linear regression did not show any statistically significant differences between the groups in term of time to clinical decision.

Conclusion
Our study showed that clinical decision in an acute surgical setting was not correlated with the triage category at our center. A possible explanation could be the lack of a specialized acute surgical department at that time. Since then, an acute surgical ward has been introduced at our hospital. A before-and-after study at the same department could further help to clarify the present result.

Flow in an acute abdominal surgical department: an observational study

Alessio Monti[1], Maria Beatriz Alexandre Quaresma[2], Ahmed Jamal Abbas Hamad[2], Miranda Elisabeth K Ocklind[1], Mathias Jakobsen[1,] Laura Hauge Kristensen[2], Lærke Storgaard Duerlund[2], Søren Lundbye-Christensen[3], Lone Schmidt Sørensen[1], Ole Thorlacius-Ussing[1]

1. Department of Surgical Gastroenterology, Aalborg University Hospital, Denmark
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Background

A prompt surgical evaluation can improve patient's morbidity and mortality in abdominal surgical emergencies. We designed a prospective observational study to describe the flow and hospital stay of acute surgical patients at Aalborg University Hospital.

Method

All acute abdominal surgical patients hospitalised between 1st February and 31st March 2020 were included. Triage groups, Early Warning Score (EWS) time, length of stay in the emergency department, time to surgery, and Time to Clinical Decision (TCD) were prospectively registered. The clinical decision was intended as the definitive diagnostic or therapeutic decision made by the on-call surgeon. TCD was thus defined as the difference between EWS and clinical decision's time (minutes). A linear regression to compare the mean time to clinical decision in the triage groups was conducted.

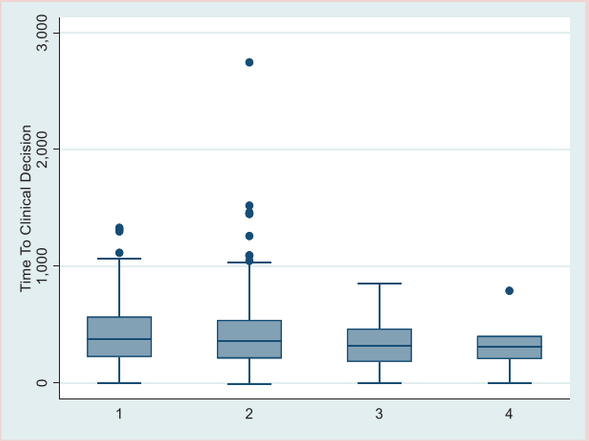
Results

After applying inclusion and exclusion criteria, 596 patients were included in data analysis. The demography as well as the TCD for the entire population and the four triage groups are showed in table 1. The linear regression did not show any statistically significant differences between the groups in term of TCD (Figure 1). However, there was a tendency towards a shorter TCD in higher triage groups.

Table 1:

Population	Total	Green	Yellow	Orange	Red
Number (n, %)	596	224	257	109	6
Sex (male %)	48	49	50	42	33
Age (mean)	54 ± 22	53 ± 23	54 ± 22	54 ± 20	61 ± 24
TCD (minutes)	395 ± 258	402 ± 244	413 ± 293	338 ± 181	350 ± 219

Figure 1:



Conclusion

Our study did not show any statistically significant difference in TCD, with respect to the triage status, in an acute surgical setting. A possible explanation could be the lack of a specialised acute surgical department at the time we conducted the study. Since then, an acute surgical ward has been introduced at our hospital. A before-and-after study at the same department could further help to clarify the present results.

Acknowledgements: We thank Dr. Elena Crescioli and Dr. Rasmus Virenfeldt Flak in helping with the data management.

Conflicts of interest: None

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Developing a training program for junior general surgeons in laparoscopic inguinal herniotomy using simulation training

Nina Wensel[1], Ahmed Hamad[1]

1. Department of Abdominal surgery, North Denmark Regional Hospital, Hjoerring, Denmark

Background
Inguinal herniotomy is one of the most commonly performed surgeries nowadays, and TAPP (TransAbdominal PrePeritoneal) surgical technique are becoming more frequently applied. Junior general surgeons do not always have adequate opportunities to perform these surgeries during their residency, mostly because of the complexity of the surgery. Simulation training is a validated method of teaching and development learning skills in different medical and surgical specialties. We aim to evaluate use of laparoscopic inguinal herniotomy via simulation training as part of a education program in surgical residency for junior physicians.

Method
This is a prospective, descriptive analysis, which is performed in the Department of Abdominal Surgery in the North Denmark Regional Hospital in the period 1st June 2021 to 30th September 2021.The course-material for simulation in TAPP-surgery was carefully selected, and the course was held along 2 weeks, followed by training in operation theatres for another 2 months. Evaluation was performed by a committee of 3 professional surgeons with expertise in TAPP-surgeries.

Perspective
We created a training program, that will be assessed after few trials to evaluate the benefit of simulation training for junior general surgeons and assess improvement in their surgical technique skills. We assume that more studies will be conducted in the future with emphasis on validating the model used in simulation trainingand furthermore to compare the improvement of surgical technique skills between different groups (novices vs experienced) in addition to other learning parameters.

Laparoscopic Inguinal Herniotomy

Developing a training program for junior general surgeons using simulation training

Nina Wensel[1], Ahmed Hamad[1]
1.Department of Abdominal surgery, North Denmark Regional Hospital, Hjoerring, Denmark.

Background

Inguinal herniotomy is one of the most commonly performed surgeries nowadays, and TAPP (TransAbdominal PrePeritoneal) surgical technique are becoming more frequently applied. **Junior general surgeons** do not always have adequate opportunities to perform these surgeries during their residency, mostly because of the complexity of the surgery. **Simulation training** is a common method of teaching and development of learning skills in different medical and surgical specialties.
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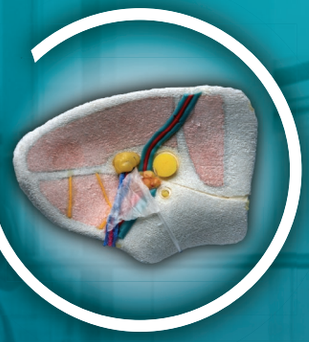

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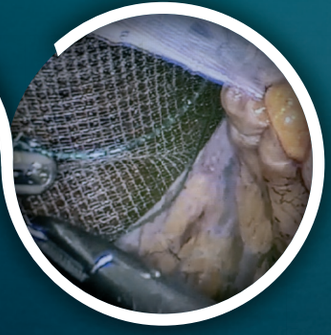
Perspective

We created a training program, that will be assessed after few trials to evaluate the benefit of simulation training for junior general surgeons and assess improvement in their surgical technique skills. We assume that more studies will be conducted in the future with emphasis on validating the model used in simulation training and furthermore to compare the **improvement of surgical technique skills** between different groups (novices vs experienced) in addition to other learning parameters.



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Association between intravenous iron therapy and short-term mortality risk in older patients undergoing hip fracture surgery: An observational study

Silas Zacharias Clemmensen[1,2], Kristian H. Kragholm[1,3,4], Dorte Melgaard[1,5], Lene T. Hansen[6], Johannes Riis[1], Christian Cavallius[7], Marianne M. Mørch[6], Maria Lukács Krogager[4,8]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Orthopedic Surgery, Aalborg University Hospital, Aalborg, Denmark
3. Unit of Clinical Biostatistics and Epidemiology, Aalborg University Hospital, Aalborg, Denmark
4. Department of Cardiology, Aalborg University Hospital, Denmark
5. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
6. Department of Geriatric Medicine, North Denmark Regional Hospital, Hjoerring, Denmark
7. Department of Orthopedic Surgery, Aalborg University Hospital, Aalborg, Denmark
8. Department of Emergency Medicine, Aalborg University Hospital, Aalborg, Denmark

Background
Anemia is common among older hip fracture patients and leads to prolonged recovery and increased postoperative mortality. Intravenous iron seems to increase hemoglobin recovery and reduce the mortality rate. This study investigated the association between short-term mortality risk and intravenous iron in older hip fracture patients.

Methods
This observational study included 210 hip fracture patients. A new local intravenous iron therapy protocol recommended intravenous iron (Monofer ©) if hemoglobin on the 3rd postoperative day was ≤ 6.5 mmol/L. According to treatment of postoperative anemia between 1st and 3rd day post-surgery, the patients were divided into four groups: No treatment (n=52), blood transfusion (n=38), IV Monofer (n=80) and blood transfusion & IV Monofer (n=40). Primary outcome was 30-day mortality post-surgery. The secondary outcome was the impact on hemoglobin levels 14-30 days post-surgery. Multivariable Cox regression was used standardized for covariates.

Results
Of 210 patients, 17 (8.1%) died within 30-days after surgery. There was a significantly lower mortality among the IV Monofer group compared to the no treatment group (HR: 0.17, 95% CI: [0.03-0.93], P = 0.041). Among the 86 patients with available hemoglobin level 14-30 days post-surgery, there was no significant difference in hemoglobin level between the various treatment groups.

Conclusion
IV Monofer on the 3rd postoperative day seemed to reduce the 30-day mortality compared with no treatment. No significant differences in hemoglobin levels 14-30 days post-surgery across treatment groups were found, although this was assessed in a subset of patients with available hemoglobin levels warranting further study.

Anemia after hip fracture

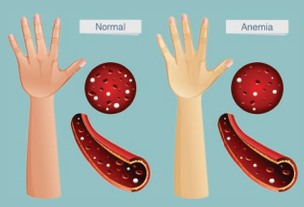
The association between intravenous iron and short-term mortality risk in older people with acute hip fracture - *An observational study*

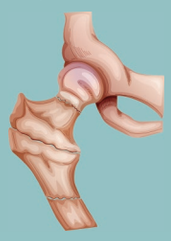
Silas Zacharias Clemmensen[1,6], Kristian H. Kragholm[1,2,3], Dorte Melgaard[1,7], Lene T. Hansen[5], Johannes Riis[1], Christian Cavallius[6], Marianne M. Mørch[5] and Maria Lukács Krogager[3,4]

[1]Center for Clinical Research, North Denmark Regional Hospital
[2]Unit of Clinical Biostatistics and Epidemiology, Aalborg University Hospital
[3]Department of Cardiology, Aalborg University Hospital
[4]Department of Emergency Medicine, Aalborg University Hospital
[5]Department of Geriatric Medicine, North Denmark Regional Hospital
[6]Department of Orthopedic Surgery, Aalborg University Hospital, Hjørring
[7]Department of Clinical Medicine, Aalborg University

Background

Anemia is common among older hip fracture patients and leads to prolonged recovery and increased postoperative mortality. In the postoperative period the standard treatment of severe anemia is allogenous blood transfusion. Patients with moderate anemia are treated with oral or intravenous iron supplements. According to previous studies, intravenous iron seems to be associated with improved patient outcomes, reduced blood product utilization, and reduced mortality. This study investigated the association between short-term mortality risk and intravenous iron in older hip fracture patients.





Methods

This observational study of intravenous iron included older patients admitted with an acute hip fracture at the Department of Orthopedic Surgery, Aalborg University Hospital, Hjørring, Denmark. A new local guideline recommended systematic treatment with intravenous iron isomaltoside 20 mg/kg (Monofer ®) to patients with a hemoglobin level ≤ 6.5 mmol/L at day 3 after hip fracture surgery. According to treatment of postoperative anemia between 1st and 3rd day post-surgery, the patients were divided into four groups (see Figure 1). Primary outcome was 30-day mortality post-surgery. Multivariable Cox regression was used adjusted for age, gender, Charlson´s Comorbidity index, polypharmacy, admission source and infection in hospital.

Results and conclusion

The 30-day mortality post-surgery was 17 (8.1%) of 210 patients. The IV Monofer treatment group had the lowest mortality (HR: 0.41, 95% CI: [0.089-1.887], and a significantly lower mortality was observed in the IV Monofer group compared to the no treatment group (see Table 1). Hence, IV Monofer on the 3rd postoperative day in older hip fracture patients seemed to reduce the 30-day mortality. In summary, this study may contribute to a new practice in treating postoperative anemia in older hip fracture patients improving the mortality post-surgery.

Table 1. The 30-day mortality risk post-surgery

	ATE analysis		Multivariable Cox Regression model		
	Average risk	CI (95%)	Hazard ratio	CI (95%)	p-value
No treatment	0.196	[0.027 – 0.364]	1	Reference	
IV Monofer	0.024	[0.000 – 0.051]	0.17	[0.03 – 0.93]	0.041*

Estimation of the average treatment effect and multivariable Cox regression model among patients with hgb postoperative day three ≤ 6.5mmol/L stratified by no treatment and IV Monofer (30-day follow-up) n=132. The multivariable analysis was standardized for covariates.

Figure 1. Study flowchart

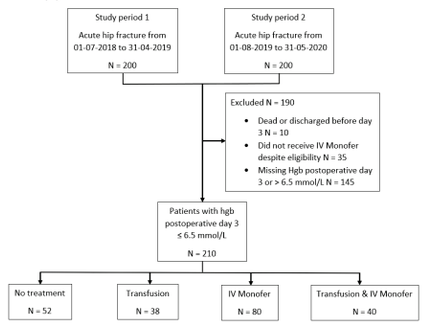
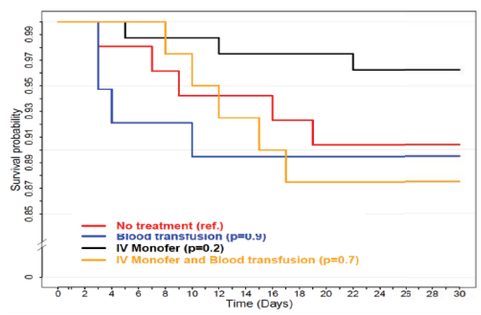


Figure 2. Kaplan Meier curves



Survival curves among the patients with hgb ≤ 6.5 mmol/L on the 3rd postoperative day stratified by treatment of postoperative anemia

Reference

Clemmensen SZ, Kragholm KH, Melgaard D *et al.* Association between intravenous iron therapy and short-term mortality risk in older patients undergoing hip fracture surgery: an observational study. *J Orthop Surg Res* 2021;**16**:320.

Correspondence

E-mail: silas.clemmensen@rn.dk

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Mikrobiota

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Children with Attention-Deficit Hyperactivity Disorder or Autism Spectrum Disorder Share Distinct Microbiota Compositions

Caspar Bundgaard-Nielsen[1], Marlene Briciet Lauritsen[2,3], Julie Kristine Knudsen[1,4], Louise Søndergaard Rold[1], Peter Hindersson[5], Peter Leutscher[1], Søren Hagstrøm[1,4,6], Mette Nyegaard[7], Suzette Sørensen[1,4]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Research Unit for Child and Adolescent Psychiatry, Aalborg University Hospital, Aalborg, Denmark
4. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
5. Department of Clinical Biochemistry, North Denmark Regional Hospital, Hjoerring, Denmark
6. Department of Pediatrics, Aalborg University Hospital, Aalborg, Denmark
7. Department of Health Science and Technology, Aalborg University, Aalborg, Denmark

Background
Studies have indicated that gut microbiota may be involved in attention-deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD), although no bacteria have consistently been identified. ADHD and ASD have a high degree of coexistence, as well as overlapping heritability, thus raising the question of whether they also share gut microbiota signatures. We, therefore, aimed to investigate the gut microbiota of ADHD and ASD in parallel.

Methods
Fecal samples were collected from 95 children and adolescents, divided into children with ADHD (n=32), ASD (n=12), and comorbid ADHD/ASD (n=11). As controls, siblings to the patient groups (n=14, 5, and 11 for siblings to ADHD, ASD, and comorbid ADHD/ASD), or non-related children (n=17) were recruited. The gut microbiota was assessed using 16S rRNA gene sequencing of the V4 hypervariable region, while gastrointestinal inflammation and permeability were investigated through measurements of fecal calprotectin and plasma lipopolysaccharide-binding protein (LBP).

Results
While alpha diversity did not differ significantly between groups, the beta-diversity analyses revealed that children with ADHD and ASD possessed highly similar gut microbiota signatures, distinct from non-related controls. Furthermore, both disorders shared several gut microbiota signatures that were distinct from non-related controls, and to a lesser extent from non-affected siblings. Finally, both ADHD and ASD had higher concentrations of plasma LBP compared to controls.

Conclusion
Children with ADHD or ASD share a distinct gut microbiota composition and increased gastrointestinal permeability, different from that of non-affected controls. This is interesting considering the high degree of comorbidity between the disorders and requires further investigations.

Children with Attention-Deficit Hyperactivity Disorder or Autism Spectrum Disorder Share Distinct Microbiota Compositions

Caspar Bundgaard-Nielsen[1,2*], Marlene B. Lauritsen[2,3], Julie Kristine Knudsen[1,2], Louise Søndergaard Rold[1,2], Peter Hindersson[4], Peter D. C. Leutscher[1,2], Søren Hagstrøm[1,2,5], Mette Nyegaard[6], Suzette Sørensen[1,2]

[1] Centre for Clinical Research, North Denmark Regional Hospital, Denmark. [2] Department of Clinical Medicine, Aalborg University, Denmark.
[3] Research Unit for Child and Adolescent Psychiatry, Aalborg University Hospital, Denmark. [4]Clinical Biochemistry Department, North Denmark Regional Hospital.
[5] Department of Pediatrics, Aalborg University Hospital, Denmark. [6]Department of Health Science and Technology, Aalborg University, Denmark

*Email: c.bundgaardnielsen@rn.dk

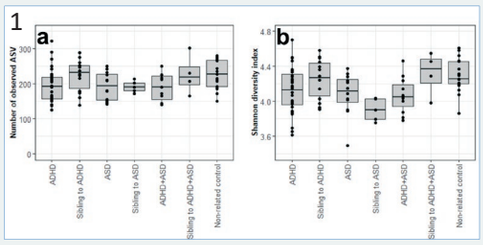
Introduction

Recent studies have suggested, that the composition of bacteria in the human gastrointestinal tract, the gut microbiota, may be involved in the neurodevelopmental disorders attention-deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD). However, individual studies have disagreed on which bacteria are associated with these disorders. Furthermore, ADHD and ASD have a high degree of clinical and genetic overlap, which raises the question on whether they may also share gut microbiota signatures. To address these issues, we therefore aimed to investigate the gut microbiota of ADHD and ASD in parallel.

Methods

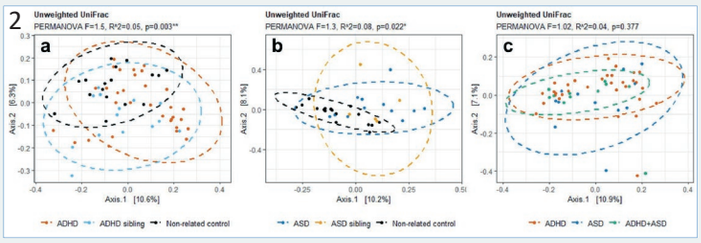
Children and adolescents aged 5-17 years were recruited at the Department of Child and Adolescent Psychiatry, as well as through social media. A total of 95 children were recruited, distributed as children with ADHD (n=32), ASD (n=12), and comorbid ADHD/ASD (n=11). As controls, we included siblings to the patient groups (n=14, 5, and 4 for siblings to ADHD, ASD and comorbid ADHD/ASD respectively), or non-related children (n=17). From all participants, fecal samples were collected, and the gut microbiota was assessed using 16S rRNA gene sequencing of the V4 hypervariable region. These were utilized to determine if the bacterial richness, diversity, and composition varied between ADHD and ASD as compared to non-affected controls

Results



1) ADHD, ASD, and non-affected controls had comparable bacterial richness and diversity

To assess variations in gut microbiota between children with ADHD and/or ASD compared to non-affected children, we first evaluated differences in alpha-diversity. This included an assessment of the number of unique bacteria (ASV richness, **figure 1a**) in each diagnostic group, as well as the distribution of these bacteria (Shannon diversity, **figure 1b**). No significant differences were observed between children with ADHD, ASD, and non-related controls nor siblings (adjusted p>0.05).

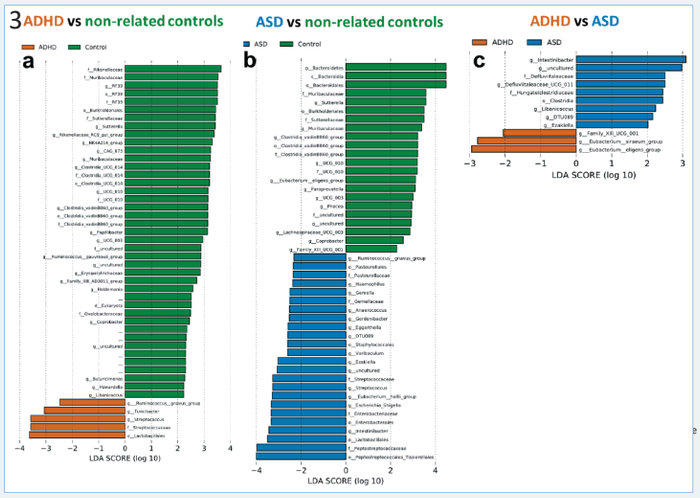


2) The gut microbiota of children with ADHD and/or ASD had overlapping bacterial compositions, separate from non-related controls

Differences and similarities in gut microbiota composition between the diagnostic groups, were visualized using principal coordinate analysis (PCoA) with unweighted UniFrac (**figure 2**). Briefly, samples that are clustering together, have highly similar bacterial compositions, whereas distant samples have very dissimilar bacterial composition. The bacterial composition of ADHD (**figure 2a**) and ASD (**figure 2b**) were significantly different from non-related controls (both adjusted p<0.05), confirming the observations from previous studies. Interestingly, we observed overlapping bacterial compositions in children with ADHD and ASD (**figure 2c**, adjusted p>0.05).

3) The gut microbiota in children with ADHD and/or ASD share gut microbiota compositions that differs from that of non-related controls

To identify the bacteria that differentiate the gut microbiota of children with ADHD or ASD from non-related controls, we utilized linear discriminant analysis-effect size (LEfSe, **figure 3a-c**). For both ADHD and ASD separately, we observed numerous bacterial variations compared to non-related controls (**figure 3 a and b respectively**, adjusted p<0.05). Compared to non-related controls, both ADHD and ASD were associated with a higher relative abundance of the bacterial genera *Streptococcus* and *Ruminococcus* and a lower relative abundance of the families Muribaculaceae and Suterellaceae, as well as the genera *Sutterella* and *Coprobacter.* Interestingly, only few differences were observed in bacterial composition between ADHD and ASD (**figure 3c**, adjusted p<0.05), suggesting that the same bacteria were involved in both neurodevelopmental disorders.



Conclusion

In this study, we demonstrated for the first time, that the gut microbiota variations in children with ADHD or ASD were shared between the two disorders. For both, an increased relative abundance of *Streptococcus* and a decreased relative abundance of *Sutterella* and *Coprobacter* were observed. Further studies are needed to investigate the cause-effect relationship between the gut microbiota and the presence of neurodevelopmental disorders, as well as how the gut microbiota may be involved in behavioral and gastrointestinal symptoms in the diagnoses.

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Changes in the gut microbiota during admission to the intensive care unit – a case-series study

Cecilie Hübner[1], Caspar Bundgaard-Nielsen[2], Emil Lønstrup Øhrstrøm[3], Kjeld Asbjørn Jensen Damgaard[3], Ann-Maria Jensen[2], Suzette Sørensen[2], Peter Leutscher[2]

1. Department of Gastro-intestinal Surgery, Aalborg University Hospital, Aalborg, Denmark
2. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Anesthesia and Intensive Care, North Denmark Regional Hospital, Hjoerring, Denmark

Background
Intestinal dysbiosis, characterized by disruption in the abundance of commensal bacteria, induces pathophysiological changes of the gut. Severe alteration of the gut microbiota in patients admitted to the Intensive Care Unit (ICU) has been reported. Dysbiosis is associated with a higher risk of clini-cal complications and mortality. Antibiotic treatment alters the gut microbiota. Nutritional therapy may also contribute to development of dysbiosis. Fecal Medical Transplantation (FMT) has been reported having beneficial therapeutic effects on critical ill patients with intestinal dysbiosis.

Aim
The primary aim of this study was to describe changes in the gut microbiota of ICU patients. A sec-ondary aim was to evaluate the possible association with antibiotics and nutritional therapeutics.

Methods
Fourteen ICU patients were included in this case-series study. Patient data including demographics and clinical characteristics were extracted from medical records and registered in REDcap data management system. Fecal samples were collected daily and analyzed via 16S rRNA sequencing.

Results
Study results will be presented at the RHN Research Symposium 2021.

Conclusion
It is expected that the study results will contribute with important new information about the pattern and pathogenesis of intestinal dysbiosis in ICU patients. Fecal Medical Transplantation may consti-tute a future therapeutic tool.

DYSBIOSIS

Changes in the GUT MICROBIOTA during admission to the INTENSIVE CARE UNIT – A Case-series study

BACKGROUND Intestinal dysbiosis, characterized by disruption in the abundance of commensal bacteria, induces pathophysiological changes of the gut. Severe alteration of the gut microbiota in patients admitted to the Intensive Care Unit (ICU) has been reported. Dysbiosis is associated with a higher risk of clinical complications and mortality. Antibiotic treatment alters the gut microbiota. Nutritional therapy may also contribute to development of dysbiosis. Fecal Medical Transplantation (FMT) has been reported having beneficial therapeutic effects on critical ill patients with intestinal dysbiosis.

AIM The primary aim of this study was to describe changes in the gut microbiota of ICU patients. A secondary aim was to evaluate the possible association with antibiotics and nutritional therapeutics.

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RESULTS Study results will be presented at the RHN Research Symposium 2021.

CONCLUSION It is expected that the study results will contribute with important new information about the pattern and pathogenesis of intestinal dysbiosis in ICU patients. Fecal Medical Transplantation may constitute a future therapeutic tool.

C. Hübner[1] C. Bundgaard-Nielsen[2] E.L. Øhrstrøm[3] Kjeld D. Jensen[3] Ann-Maria Jensen[2] S. Sørensen[2] P. Leutscher[2]

[1]Department of Surgery, Aalborg Universitetshospital

[2]Centre for Clinical Research, North Denmark Regional Hospital

[3]Department of Anesthesia and Intensive Care Treatment, North Denmark Regional Hospital

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Assessment of the gut microbiota in treatment-naïve patients with depression after initiation of antidepressant therapy

Julie Kristine Knudsen[1,2], Caspar Bundgaard-Nielsen[1,2], Peter Leutscher[1,2], Simon Hjerrild[3,4], René Ernst Nielsen[2,5], Suzette Sørensen[1,2]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Department of Affective Disorders, Aarhus University Hospital, Aarhus, Denmark
4. Department of Clinical Medicine, Aarhus University, Aarhus, Denmark
5. Department of Psychiatry, Aalborg University Hospital, Aalborg, Denmark

Introduction
Major depressive disorder (MDD) is a mood disorder which involves emotional and cognitive symptoms, but also physical symptoms such as gastrointestinal distress. Recently, the gut microbiota has been implied to play a role in MDD pathogenesis, as antidepressant medication has been found to contain antibacterial properties, as well as induce alterations in appetite. The aim of this study was to analyse the gut microbiota of patients with MDD in comparison to non-depressed individuals (nonMDD), and examine the longitudinal effect of antidepressant treatment in patients with MDD.

Methods
Faecal samples were collected from participants at baseline, and again at four and twelve weeks. After the delivery of the baseline samples, patients with MDD initiated their antidepressant treatment. Characterization of the gut microbiota was performed by 16S rRNA gene sequencing targeting the hypervariable V4 region.

Results
A total of 21 patients with MDD delivered the baseline sample and 13 patients completed the study. In the nonMDD group, 30 completed the study. There was no difference between the MDD and nonMDD group in neither α- nor β-diversity. However, there was a lower relative abundance of the genera Lactobacillus, *Bilophila*, *Coprobacter*, and *Desulfovibrio* and a higher relative abundance of the genera *Ruminococcus* and *Intestinibacter* in the MDD group compared to the nonMDD group. At the twelve weeks follow up, the families *Ruminococcaceae*, *Clostridiaceae* and *Peptostreptococcaceae* were found depleted compared to the baseline samples in the MDD group.

Conclusion
The MDD group differed significantly in several taxa, including elevated relative abundance of *Ruminococcus* and depleted relative abundance of *Lactobacillus* compared to the nonMDD group. Moreover, the relative abundance of the family *Ruminococcaceae* decreased in the MDD group after twelve weeks of antidepressant therapy.

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Regionshospital Nordjylland

Intestinal bacterial taxa of patients with depression differ from healthy individuals and changes during antidepressant therapy

Julie Kristine Knudsen[1, 2], Caspar Bundgaard-Nielsen[1, 2], Peter Leutscher[1, 2], Simon Hjerrild[3,4], René Ernst Nielsen[2, 5], Suzette Sørensen[1, 2]

1: Centre for Clinical Research, North Denmark Regional Hospital, Hjørring, Denmark.
2: Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3: Psychosis Research Unit, Aarhus University Hospital, Aarhus, Denmark.
4: Department of Clinical Medicine, Aarhus University, Aarhus, Denmark.
5: Department of Psychiatry, Aalborg University hospital, Aalborg, Denmark

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Introduction

Major depressive disorder (MDD) is an affective disorder characterized primarily by depressed mood and anhedonia (1). Mental and cognitive symptoms are the core symptoms of MDD, but patients also experience physical distress such as gastrointestinal symptoms, including stomach pain and constipation (2). Additionally, antidepressant medicine have been found to contain antibacterial properties (3). A link between the gut-brain axis and depression has therefore been suggested for MDD (4).

During the last decade, several studies have attempted to characterize the gut microbiota of patients with MDD (5). They found that it was possible to separate patients from controls based on diversity indices, or in individual phylotypes. However, previous studies had heterogenous study populations and patients were often in active pharmacological treatment during sampling.

The aim of this study was to characterize the antidepressant treatment-naïve gut microbiota in younger, adult patients newly diagnosed with MDD before and after initiation of antidepressant treatment, pharmacological and/or cognitive, and compare this to a non-depressed group (nonMDD).

Methods

Young adults between 18 and 24 of age were recruited. A psychiatrist diagnosed patients according to ICD-10 criteria. Exclusion criteria included: antidepressant treatment; other psychiatric disorders; gastrointestinal, neurological immune or endocrine disorders; specific dietary habits; pregnancy; antibiotics or probiotics use prior to inclusion. Non-depressed individuals between 18 and 30 years of age were included, and identical exclusion criteria to that of patients with MDD were used, with the addition of current or previous MDD diagnosis. Faecal samples were collected from the participants at baseline, and after four and twelve weeks, respectively. Additionally, a Major Depressive Inventory was used to rate depressive symptoms. Antidepressant therapy (medical and/or cognitive) was commenced after the delivery of the baseline sample for patients. Gut microbiota characterization was performed by 16S rRNA gene sequencing using primers 515FB and 806RB (6, 7) on an Illumina MiSeq targeting the hypervariable V4 region. α- and β-diversity, as well as individual differences in bacterial taxa, were explored for each group.

Figure 1 - beta diversity

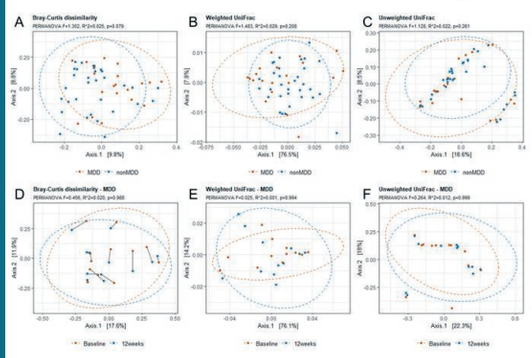
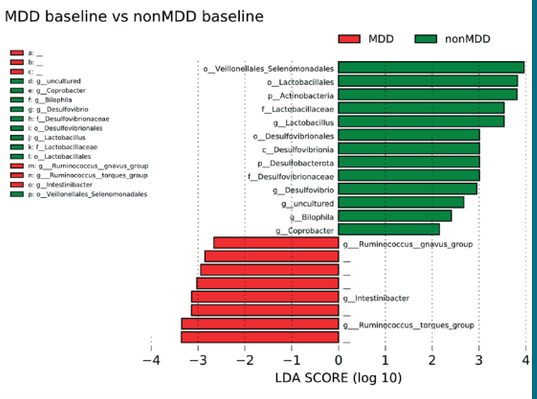


Figure 2 - bacterial differences between MDD and nonMDD



Results and discussion

In total, 32 nonMDD individuals and 27 patients with MDD were recruited. Of these, 30 in the nonMDD group and 21 in the MDD group collected the baseline sample, and 30 in the nonMDD group and 13 in the MDD group delivered all samples. Of the thirteen patients with MDD, two achieved complete remission at twelve week follow-up. Over the twelve weeks, patients with MDD became significantly less depressed ($p = 0.02$). Furthermore, a higher frequency of gastrointestinal complaints was reported amongst patients with MDD compared to the participants in the nonMDD group.

It was not possible to distinguish between the MDD and nonMDD groups based on α-diversity using total observed amplicon sequence variants, Faiths phylogenetic diversity or Shannon index (data not displayed), or β-diversity using Bray-Curtis similarity or weighted and unweighted UniFrac (Figure 1).

However, there were significant differences in several individual taxa between the two groups using linear discriminant analysis scores (Figure 2). In the MDD group, the relative abundance of the phylum Actinobacteria, the families *Lactobacillaceae* and *Desulfovibrionaceae*, and the genera *Desulfovibrio, Lactobacillus, Bilophila,* and *Coprobacter* were observed to be lower at baseline. On the contrary, the relative abundance of the genera *Ruminococcus gnavus* group, *Ruminococcus torques* group and *Intestinibacter* were higher.

Furthermore, several phylotypes changed in relative abundance between the baseline to twelve weeks samples in the MDD group, with a decrease in the families *Peptostreptococcaceae, Clostridiaceae* and *Ruminococcaceae* (data not displayed).

Conclusions

It was not possible to discern between the groups based on overall diversity. However, many individual taxa were significantly different between the two groups. Of specific interest, *Ruminococcus* was found to be increased in relative abundance at baseline, while its parent family *Ruminococcaceae* was decreased in relative abundance in the MDD group after twelve weeks of antidepressant treatment.

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The DANish Maternal and Offspring Microbiome study (DANMOM): a study protocol

Louise Søndergaard Rold[1,2], Caspar Bundgaard-Nielsen[1,3], Peter Leutscher[1,2,3], Søren Hagstrøm[1,2,3,4], Suzette Sørensen[1,2,3]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Steno Diabetes Centre North Jutland, Aalborg, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
4. Department of Pediatrics, Aalborg University Hospital, Aalborg, Denmark

Background
The incidence of women developing gestational diabetes mellitus (GDM) is rising, which is associated with an increased risk of type 2 diabetes mellitus (T2DM) for both mother and child. GDM women have altered gut microbiota (dysbiosis), but it is unknown if this dysbiosis is involved in the development of GDM or simply is a consequence of the disease state. Furthermore, the altered bacterial composition may be transferred to the infant and thereby exposing it to disease risk. Knowledge about how and when dysbiosis develops, if the GDM-offspring has dysbiotic colonization, and how the GDM-associated microbiota influences the host, could offer a potential target for prevention and treatment in the future. We have initiated the DANish Maternal and Offspring Microbiome study (DANMOM) to investigate the role of the microbiota in GDM development, and the bacterial transmission from mother to child.

Methods
The association between microbiota and the development of GDM will be investigated by comparing the gut microbiota from pregnant women before and after GDM develops. To investigate whether GDM-exposed children have a dysbiotic gut microbiota colonization, and the role of the mother's microbiota in the colonization process, we will compare bacteria profiles from mother and child. The bacterial DNA compositions will be characterized by 16S rRNA gene sequencing.

Expected outcome
We expect to find altered microbiota in women before GDM-development, and that the infant's gut microbiota colonization is dependent of the mother's GDM state. This knowledge could be used in the prevention of diabetes and treatment of both mother and child.

The DANish Maternal and Offspring Microbiome study (DANMOM): a study protocol

Louise Rold[1,2], Caspar Bundgaard-Nielsen[1,3], Peter Leutscher[1,2,3], Søren Hagstrøm[1,2,3,4], Suzette Sørensen[1,2,3]

[1]Center for Clinical Research, North Denmark Regional Hospital, Denmark
[2]Steno Diabetes Center North Denmark
[3]Department of Clinical Medicine, Aalborg University, Denmark
[4]Department of Pediatrics, Aalborg University Hospital, Denmark

*Email: l.rold@rn.dk

Background

The incidence of women developing gestational diabetes mellitus (GDM) is rising, which is associated with an increased risk of type 2 diabetes mellitus (T2DM) for both mother and child(1-2). GDM women have altered gut microbiota (dysbiosis)(3), but it is unknown if this dysbiosis is involved in the development of GDM or simply is a consequence of the disease state. Furthermore, the altered bacterial composition may be transferred to the infant and thereby exposing it to disease risk. Knowledge about how and when dysbiosis develops, if the GDM-offspring has dysbiotic colonization, and how the GDM-associated microbiota influences the host, could offer a potential target for prevention and treatment in the future.

We have initiated the DANish Maternal and Offspring Microbiome study (DANMOM) to investigate the role of the microbiota in GDM development, and the bacterial transmission from mother to child.

This specific aims of the DANMOM study is;

1) To investigate the association between the gut microbiota and the development of GDM
2) To investigate the bacterial transmission from mother to child
3) To identify factors both during pregnancy, during delivery, and postpartum that influences the establishment of the child's gut microbiota the first 5 years of life.

Methods

The DANish Maternal and Offspring Microbiome study (DANMOM) is a longitudinal prospective cohort study that will follow 300 pregnant women throughout pregnancy, where 200 of these women and their offspring will be followed from birth and up to 5 years after birth.

To investigate the association between the microbiota and the development of GDM, and bacteria transmission from mother to child, we will compare the bacterial composition between different samples collected at different time points. Samples will be collected from the gut, vagina, and breast. To characterize the bacterial compositions in the samples, bacterial DNA will be extracted from the samples and analyzed by 16S rRNA gene sequencing.

1) The association between the gut microbiota and the development of GDM

To investigate the association between microbiota and the development of GDM, we will compare the bacterial composition in samples from the gut from pregnant women before and after GDM normally develops.

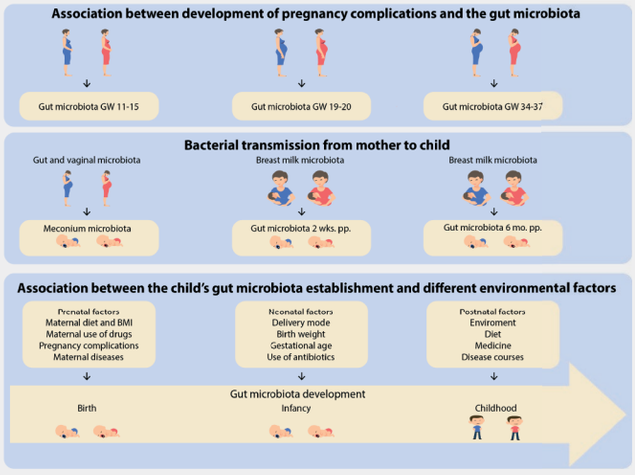
2) The bacterial transmission from mother to child

The perinatal bacterial transmission will be investigated around the time of birth by comparing microbiota from the gut, and vagina from the mother with meconium from the infant.

The postnatal transmission will be assessed by comparing breast milk from the mother with stool from the child.

3) The association between environmental factors and the establishment of the child's microbiota

To investigate the association between the child's gut microbiota establishment and different environmental factors, we will compare clinical information with the child's gut microbiota.



Expected outcome

We expect to find altered microbiota in women before GDM-development, and that the infant's gut microbiota colonization is dependent of the mother's GDM state. This knowledge could be used in the prevention of diabetes and treatment of both mother and child.

Acknowledgement

We would like to thank the Steno Diabetes Center North Denmark and the Marie Pedersen og Jensine Heibergs Fond for financial support.
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Neurologi og Neurokirurgi

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BCI-STAR Project: Brain Computer Interface for upper limb rehabilitation following stroke

B Svejgaard[1,2], AJT Stevenson[3], HRM Jørgensen[4], C Kristensen[1], N Svaneborg[1], S Dosen[3]

1. Department of Neurosurgery, Aalborg University Hospital, Aalborg, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Department of Health Science and Technology, Aalborg University, Aalborg, Denmark
4. Department of Neurology, North Denmark Regional Hospital, Broenderslev, Denmark

Background
A Brain Computer Interface (BCI) is a system that translates brain activity into an output signal which triggers skin electrodes and creates movement in otherwise paralytic limbs. In associative BCI, the afferent volley generated from the peripheral stimulation arrives precisely during the most active phase of the motor cortex, which results in improved neuroplasticity and recovery.

In an earlier study, stroke patients receiving associative BCI intervention showed significant improvements in lower extremity function as measured by clinical scales as well as changes in muscular evoked potentials (MEPs) in response to TMS.

The aim of this current project is to improve the functional outcome of stroke patients with upper extremity weakness using associative BCI.

Methods
60 hospitalized subacute patients will be assigned to 2 intervention groups; 30 patients will receive 12 training sessions over 4-5 weeks, and 30 will receive 20 training sessions over 5-6 weeks. In each group, half will be randomized receive functional electrical stimulation (FES) of the radial nerve, and half will receive sub-sensory (sham) stimulation.
Functional recovery will be measured by clinical scales as well as changes in MEPs.

Results
Preliminary results show marked (but insignificant due to low sample size) increases in the Fugl-Meyer Upper Extremity scale (avg. 17/66 points), compared to the sham group (avg. 4/66 points). As sample size increases, we expect to see significant increases in clinical scales as well as MEPs when comparing intervention FES and sham groups.

Conclusions
Conclusions will be presented at the symposium.

BCI-STAR PROJECT

Brain Computer Interface for upper limb rehabilitation following stroke

Contact: benjamin.joergensen@rn.dk

AIM To use advanced Brain Computer Interface technology to reforge the connection between brain and arm in patients suffering from upper limb weakness following stroke.

BACKGROUND & HYPOTHESIS

In an earlier study†, stroke patients receiving associative Brain Computer Interface (BCI) training (see box) experienced significant improvements in lower limb function compared to controls (Fig 1).

It is hypothesized that the increased recovery is due to induced neuroplasticity in response to electrical stimulation of the paretic limb.

In this current study, we adapt the system specifically to target recovery of upper limb function in hospitalized stroke patients.

We hypothesize that patients receiving associative BCI training of upper limb function will show significantly greater improvements in recovery compared to the sham control group.

Brain Computer Interface?

A Brain Computer Interface (BCI) system is a system that translates brain activity into control signals for external devices, e.g., a wheelchair, a computer cursor or a set of muscle electrodes

In a typical noninvasive BCI, EEG signals from the motor cortex are collected and analyzed, and are subsequently translated into an output signal that triggers skin electrodes, and by extension, creates movement in an otherwise paralytic limb when movement is attempted.

We have developed an "associative" BCI system, where the exact timing of peripheral stimulation improves motor recovery even further, compared to conventional BCI rehabilitation.

METHODS

- **60 hospitalized subacute stroke patients** with upper limb weakness at the rehabilitation unit in Brønderslev.
- **12-20 training sessions** over **4-6 weeks**
- Randomization to **electrical stimulation (BCI group)** or **sham stimulation (control group).**
- The BCI group receives sufficient current to activate the paretic muscles. The sham group receives subsensory levels.
- Each session starts with **30 repetitions of wrist extension** in the paretic arm. **Timing** of the most active phase of the motor cortex is calculated from EEG data.
- Each session ends with **30 repetitions of wrist extension with peripheral electrical nerve stimulation** precisely timed using the BCI

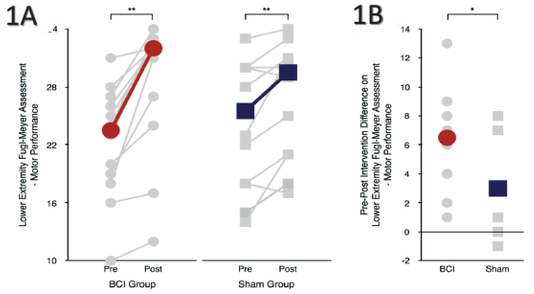

Figure 1A: Lower extremity Fugl-Meyer (LE-FM) motor performance scores prior to and following all intervention sessions for the BCI and Sham groups. Both groups received conventional physiotherapeutic training during the four week period, and both groups showed significant increases in lower limb function.
Figure 1B: Comparison between functional increase in patients receiving BCI training and patients receiving Sham stimulation. The BCI group experienced a significantly better outcome when measured by the Lower Extremeity Fugl-Meyer scale.

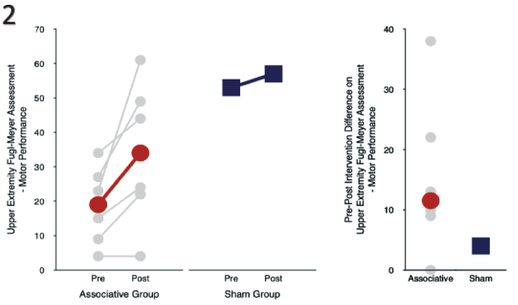

Figure 2: Preliminary testing results. Gray columns represent pre-training test results, colored boxes represent test results obtained after 12 training sessions over 4-5 weeks.

PRELIMINARY & EXPECTED RESULTS

In six patients in the BCI group, we have found a median increase of 12 points on the Upper Extremity Fugl-Meyer assessment scale. One patient in the control group has gained 4 points in the same period.

It is expected that both groups will show significant recovery during their stay at the rehabilitation center. **However, we expect that the BCI group will exhibit significantly greater recovery compared to the control group.**

Authors, Affiliations & References

Benjamin Svejgaard*[1,2], Andrew JT Stevenson[3]
Helle RM Jørgensen[4], Claudia CH Kristensen[1]
Niels Svaneborg[1], Strahinja Dosen[3]

1 Neurologisk Afdeling, Aalborg Universitetshospital, Aalborg, Denmark
2 Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3 Department of Health Science and Technology, Aalborg University, Denmark
4 Neuroenhed Nord, Brønderslev, Regionshospital Nordjylland, Denmark

†: **Mrachacz-Kersting et al. 2019: Brain-state dependent stimulation boosts functional recovery following stroke**

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TYRX in spinal cord stimulation – Infection rates in non-TYRX vs. TYRX-coated implant pulse generators

Rares Miscov[1], Helga Angela Gulisano[1], Carsten Reidies Bjarkam[1]

1. Department of Neurosurgery, Aalborg University Hospital, Aalborg, Denmark

Background
Surgical site infections (SSI) are decreasing nowadays, due to a better understanding of the phenomenon through rigorous clinical research. Infection rate for implant pulse generators (IPG) ranges between 3-6 % from both academic and nonacademic hospitals.

Clinical signs and symptoms of infection are fever, localized surgical site pain, wound erythema, wound drainage, wound swelling, wound dehiscence and nausea.

The TYRX antibacterial envelope is a new scientifically validated absorbable, multifilament, antibiotic-eluting envelope used successfully in reducing infection rates in cardiovascular implantable electronic devices (CIEDs).

Methods
It is a single-center (Aalborg University Hospital), retrospective, cohort study, where the examined population consists of patients with chronic non-malignant pain, who are under treatment with spinal cord stimulation.

The goal of the study is to observe if there is an effect on infection rates after implementing the use of TYRX envelope in 2020, as compared to the previous years where the TYRX material was not available.

The primary endpoint will be infection in the IPG pocket which leads to either antibiotic treatment (oral/intravenous) or removal of the system.

Results
At the moment the data is under collection.

Conclusions
The TYRX envelope is a very promising technology, used with success in the field of CIEDs to reduce infection rate, and there is hope that the material will have the same effect in spinal cord stimulation.

TYRX in spinal cord stimulation – Infection rates in TYRX vs. non-TYRX-coated implant pulse generators

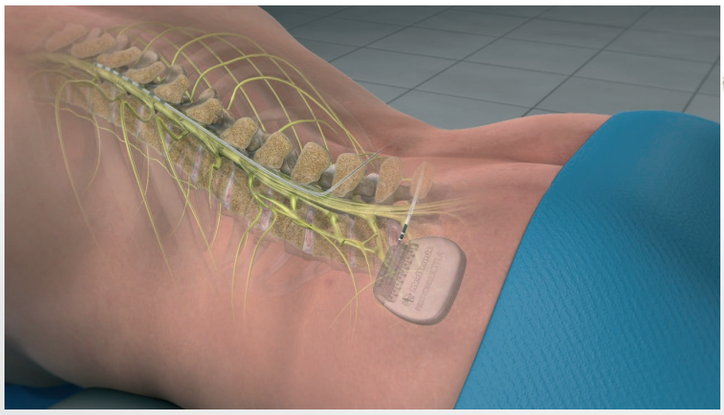
Miscov Rares, Gulisano Helga Angela, Bjarkam Carsten Reidies
Department of Neurosurgery, Aalborg University Hospital

Background

Spinal cord stimulation (SCS) is a surgical treatment for chronic neuropathic pain refractory to conventional treatment. SCS treatment consists of one or more leads implanted in the epidural space of the spinal canal, connected to an implantable pulse generator (IPG). Infection rate for IPG ranges between 3-6 % in academic and nonacademic hospitals.

The TYRX antibacterial envelope is a new scientifically validated absorbable, multifilament, antibiotic-eluting envelope used successfully in reducing infection rates in cardiovascular implantable electronic devices (CIEDs).

We consider therefore further research in the domain of paramount importance, given the great potential of reducing infection rates in patients treated with SCS.



Methods

It is a single-center, retrospective, cohort study, where the examined population consists of patients with chronic non-malignant pain, who are under treatment with SCS.

The TYRX envelope was implemented in january 2020 at the Department of Neurosurgery, Aalborg University Hospital.

The primary endpoint will be infection in the IPG pocket which leads to either antibiotic treatment (oral/intravenous) or removal of the system within 3 months from surgery, and the secondary endpoint is quality of life, assessed with the Short Form 36 questionnaire.

Data gathering is underway and results are expected to be presented in autumn 2022.

Conclusion

The TYRX envelope is a very promising technology, used with success in the field of CIEDs to reduce infection rate, with hope that it will have the same effect in SCS.

AALBORG UNIVERSITY HOSPITAL

PÆDIATRI

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Neurological and cognitive long-term sequelae after cerebral thrombosis in children. A nationwide study

Jeanette Sønderlyng Springer[1,2,3,4], Charlotte Olesen[5], Jan Brink Valentin[3], Søren Paaske Johnsen[3], Ruta Tuckuviene[6]

1. Department of Pediatrics, Aalborg University Hospital, Aalborg, Denmark
2. Department of Pediatrics, North Denmark Regional Hospital, Hjoerring, Denmark
3. Danish Center for Clinical Health Services Research (DACS), Department of Clinical Medicine, Aalborg University and Aalborg University Hospital, Aalborg
4. Center for Clinical Research, North Denmark Regional Hospital
5. Department of Pediatrics, Aarhus University Hospital, Aarhus
6. Juliane Marie Centre, Rigshospitalet, Copenhagen, Denmark

Background

Cerebral thromboses, defined as arterial ischemic stroke (AIS) and cerebral sinovenous thrombosis (CSVT) in childhood are rare but severe diseases. The incidence of AIS in children is 1.7 per 100.000 children pr. year[1]. CSVT occurs in 0.7 per 100.000 children pr. year[2]. This corresponds to 20 children in Denmark each year.

Brain injury is a known complication. Neurological sequelae are found in 67% of the children at follow-up (mean 3 years)[1].

Follow-up studies of short- to medium-term indicates that neurological sequelae are very frequent among children surviving thrombosis3. However long-term data are lacking.

The aim was to investigate long-term outcomes in children after AIS and CSVT such as neurological and cognitive deficits.

Methods

Patients were identified in the Danish National Registry of Patients and were previously verified by record review4. Long-term register-based follow-up was performed among 251 Danish children diagnosed with their first AIS or CSVT between 1994-2006[4]. An age and sex matched comparison population were identified in the general population. Follow-up was investigated between January 1994 – December 2017. Study outcomes such as long-term mortality and neurological deficits were investigated.

Results

Preliminary results will be presented at the symposium.

The cerebral thrombosis group had a mean follow-up period of 15.7 years (SD 5.4) whereas the comparison population had a follow-up period of 16.9 years (SD 3.6). Mortality and diagnoses describing late sequelae after cerebral thrombosis will be presented.

Conclusion

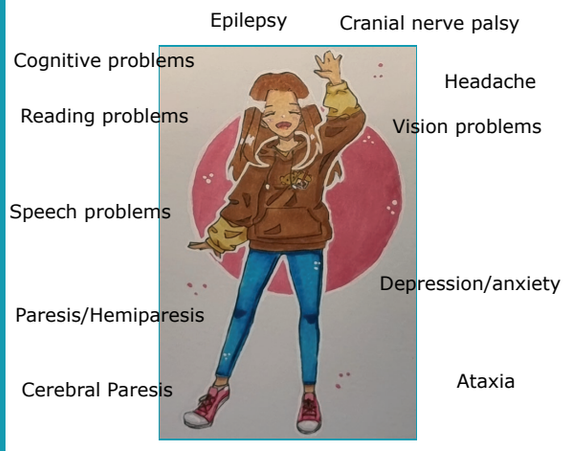
The study findings will increase knowledge on long-term outcomes in persons who experienced thrombosis in the brain in childhood.

Neurological and cognitive long-term sequelae after cerebral thrombosis in children
A nationwide study

Springer JS[1,2,3,4], Olesen C[5], Valentin JB[3], Johnsen SP[3], Tuckuviene R[6]

1) Department of Pediatrics, Aalborg University Hospital, Aalborg, Denmark
2) Department of Pediatrics, North Denmark Regional Hospital, Hjoerring, Denmark
3) Danish Center for Clinical Health Services Research (DACS), Department of Clinical Medicine, Aalborg University and Aalborg University Hospital, Aalborg, Denmark
4) Center for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
5) Department of Pediatrics, Aarhus University Hospital, Aarhus, Denmark
6) Juliane Marie Centre, Rigshospitalet, Copenhagen, Denmark

SEQUELAE AFTER CEREBRAL THROMBOSIS



METHODS

Patients were identified in the Danish National Registry of Patients and were previously verified by record review[4].

Diagnosed between 1994-2006[4]

Cases
251 children
0-18 years old
first time AIS or CSVT

Match 1:10

Comparison population
2510 children
from general population
matched on age and sex

Longterm follow-up: January 1994 - December 2017

Outcomes investigated:
longterm mortality and neurological deficits

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2. deVeber G et al. Cerebral sinovenous thrombosis in children. N Engl J Med. 2001;345(6):417-423.
3. Roach ES et al. Management of stroke in infants and children: A scientific statement from a special writing group of the american heart association stroke council and the council on cardiovascular disease in the young. Stroke 2008;39(9):2644-2691.
4. Tuckuviene R et al. Paediatric arterial ischemic stroke and cerebral sinovenous thrombosis in Denmark 1994-2006: A nationwide population-based study. Acta Paediatr. 2011;100(4):543-549.

BACKGROUND

Cerebral thromboses, defined as arterial ischemic stroke (AIS) and cerebral sinovenous thrombosis (CSVT) in childhood are rare but severe diseases.
The incidence of AIS in children is 1.7 per 100.000 children pr. year[1]. CSVT occurs in 0.7 per 100.000 children pr. year[2]. This corresponds to 20 children in Denmark each year.
Brain injury is a known complication. Neurological sequelae are found in 67% of the children at follow-up (mean 3 years)[1]. Follow-up studies of short- to medium-term indicates that neurological sequelae are very frequent among children surviving thrombosis[3]. However long-term data are lacking.

The aim was to investigate long-term outcomes in children after AIS and CSVT such as neurological and cognitive deficits.

PRELIMINARY RESULTS

Mean follow-up period after cerebral thrombosis in arterial ischemic stroke or cerebral sinovenous thrombosis group was 15.7 years (SD 5.4) versus 16.9 years (SD 3.6) in the comparison population

Table 1. Mortality in children and adolescents during follow-up period

	AIS+CSVT N=251	Comparison population N=2510	p value
All-cause mortality, number of children (%)	23 children (9.2%)	10 children (0.4%)	**0.000**

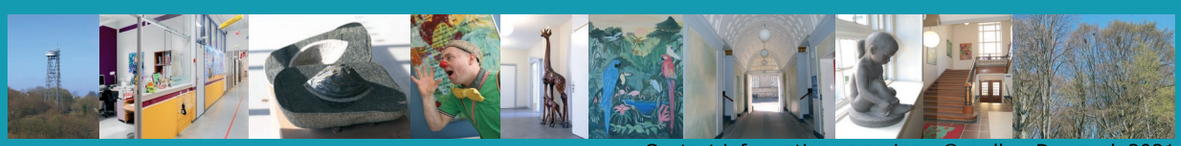
Table 2. Frequency of diagnoses during follow-up period

	ICD-10	AIS+CSVT N=251	Comparison population N=2510	p value
Psychiatric diagnoses I*	F06-F07, F09, F20-29, F30-F39, F60-F69	10 (4.0%)	30 (1.2%)	**0.031**
Psychiatric diagnoses II**	F40-F48, F50-F59, F80-F89, F90-F95, F98-F99, G47	28 (11.2%)	104 (4.1%)	**0.000**
Mental retardation, (including delayed development)	F70-F79, R62	41 (16.3%)	41 (1.6%)	0.092
Epilepsy	G40-G41, R56.8	77 (30.1%)	55 (2.2%)	**0.000**
Syndromes with paralysis	G80, G81-G83, M62.3-M62.4	93 (37.1%)	20 (0.8%)	**0.000**
Movement disorders	G24, R25, R26-R27	27 (10.8%)	22 (0.9%)	**0.049**
Vision problems	H46-H48, H53-H54, H58.1	27 (10.8%)	20 (0.8%)	**0.030**
Hearing problems	H90-H91, H93	7 (2.8%)	44 (1.8%)	**0.000**
Headache (incl migraine)	G43-G44, R51	45 (17.9%)	84 (3.4%)	0.105
Other illness in the nervoussystem***	G90, G91-G99	33 (13.2%)	29 (1.2%)	0.056

Preliminary data, values not adjusted
* e.g. psychosis, schizophrenia, depression, bipolar disorder
** e.g. phobia, anxiety, OCD, sleeping disorders, ADHD, tics, attachment disorder
*** e.g. hydrocephalus, idiopathic intracranial hypertension, cystis cerebri

CONCLUSION

Children and adolescents have significant higher mortality and comorbidity after arterial ischemic stroke or cerebral sinovenous thrombosis when compared with children and adolescents without cerebral thrombosis.



Contact information: n.springer@rn.dk Denmark 2021

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Therapeutic interventions for siblings of children and youth suffering from mental disorders – a systematic review

Sofie Bystrøm-Berger[1], Line Løvgren Nielsen[2], Mona Kyndi Pedersen[3,4], Christina Mohr-Jensen[1]

1. Department: Research Unit for Child and Adolescent Psychiatry and Centre for Relatives, Aalborg University Hospital, Aalborg, Denmark
2. Institute of Communication and Psychology, Aalborg University, Aalborg, Denmark
3. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
To live in a family affected by mental illness is a strain on the other family members. Children and youth with a mentally ill sibling report i.a. lower quality of life, problems in their social life and greater cognitive impairments, compared to their peers. They are in high risk for developing a mental illness themselves, due to the psychosocial stress and genetic heritability psychological illness carries.

The research and literature concerning the effect of interventions given to children and youth with a sibling suffering from a mental disorder, is sparse. The objective of this systematic review is therefore to identify, assess and summarize the existing research covering this topic.

Methods
A systematic search in PsycNet, PubMed and EMBASE, and following screening yielded 6 papers. All papers were reviewed by two authors. A critical appraisal of each study will be performed, to evaluate the quality of the existing literature. If feasible, a meta-analysis will be conducted.

Results
The outcome measures are: knowledge about the disease and the relative sibling´s mental health (i.e. depression, anxiety, coping). The preliminary results will be available at the Research symposium.

Conclusion
The perspective of the study is to gain a knowledge about the effect of therapeutic interventions given to children and youth, with a sibling suffering from a mental illness.

Additionally, the systematic review will create a description, critical evaluation and a summary of the existing evidence within in this field.

I AM IMPORTANT TOO!

Therapeutic interventions for children and youth with siblings suffering from psychiatric disorders – a systematic review

Sofie Bystrøm-Berger[1,2] • Line Løvgren Nielsen[3] • Mona Kyndi Pedersen[4,5] • Christina Mohr Jensen [1,3]

[1] Research Unit for Child and Adolescent Psychiatry, Aalborg University Hospital, Aalborg, Denmark
[2]Centre for Relatives, Aalborg University Hospital, Aalborg, Denmark
[3]The Faculty of Humanities, Institute of Communication and Psychology, Psychology, Aalborg University, Aalborg, Denmark
[4]Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark, [5]Department of Clinical Medicine, Aalborg University, Aalborg Denmark

Illustration by Camilla Holm Krogh

Background and objective:

Siblings of people suffering from a psychiatric disorder have a high risk for developing a mental illness themselves. Many have a genetic vulnerability for developing a psychiatric disorder, in addition to the strain it is to live with a mentally ill sibling. Siblings report feelings of isolation, shame, guilt, anger and fear. Research shows that these siblings have lower school and leisure engagement, lower report of quality of life, as well as lower cognitive capacity, compared to peers. Parents report lack of time and energy to support these siblings.

The objective of this systematic review was to identify, assess and summarize the existing research covering interventions given to children and youth, who are siblings to people with a psychiatric disorder.

Method:

A systematic search in PsycNet, PubMed and EMBASE was conducted, resulting in 2210 papers. A screening was conducted by two of the authors, based on pre-selected inclusion and exclusion criteria, following the PRISMA guidelines.

Results:

The screening yielded six articles. In five of the articles, a psychoeducational group intervention was provided to the siblings.

The overall results showed, that psychoeducational group intervention had significant effect on siblings:

- coping strategies
- knowledge of the disorder
- psychosocial wellbeing
- depression
- anxiety

In one study, family therapy was given to the whole family, including both the mentally ill and healthy sibling. This study showed a lowered psychosocial wellbeing in the siblings, following the intervention.

Discussion and perspective:

The overall results of the systematic review shows, that an intervention given to siblings of people with psychiatric disorders has a positive effect.

Research covering family therapy does not necessarily implicate, that family therapy worsens sibling's wellbeing. It can be argued, that the increase in reported psychosocial problems is merely a result from a shift in parents and the sibling's own perspective of their situation. Therefore, it is possible that these results reflect a greater awareness for the whole family´s strain following the intervention, rather than worsening of the healthy sibling's psychosocial wellbeing.

This systematic review revealed a positive effect of therapeutic interventions to siblings of people with psychiatric disorders. Therefore, to prevent further impairment or development of mental illness, it is recommended to offer siblings of people with psychiatric disorders an (slet) a therapeutic intervention.

in view of this, it is recommended to offer siblings of people with psychiatric disorders an intervention, to prevent further impairment or development of mental illness.

Contact information: Sofie Bystrøm-Berger, sby@rn.dk

NORTH DENMARK REGIONAL HOSPITAL

AALBORG UNIVERSITY DENMARK

CKF | CENTRE FOR CLINICAL RESEARCH North Denmark Regional Hospital

43

Coping through actions and caring through technology – fathers' experiences of parenting a child with diabetes

Trine Ulriksen Hauge[1], Mona Kyndi Pedersen[2,3]

1. School of Nursing, Health Studies, University College of Northern Denmark, Aalborg, Denmark
2. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
3. Centre for Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
When a child is diagnosed with diabetes, the life of the entire family changes. Research shows that participation in care by both parents is associated with positive outcomes. Fathers of children with chronic diseases have been underrepresented in previous research. Thus, fathers' perspectives, and the full extent of their involvement, is poorly understood by researchers and health care professionals. Therefore, this study aims to investigate how participation in caring was experienced by fathers of children with diabetes.

Methods
A qualitative design with a phenomenological and hermeneutic approach was applied. Three fathers participated in individual photo-interviews, which were analyzed based on a Ricoeur inspired analysis.

Results
The study showed that fathers gained a sense of coping through actions. This focus on actions gave rise to a constant struggle trying to keep the child safe - here and now but also in the long term. This feeling was not stable due to the unpredictability of the disease. The fathers described technology as a burden, but also and primarily as a mean of making everyday life easier for their child. Technology was looked upon as a co-player in this struggle.

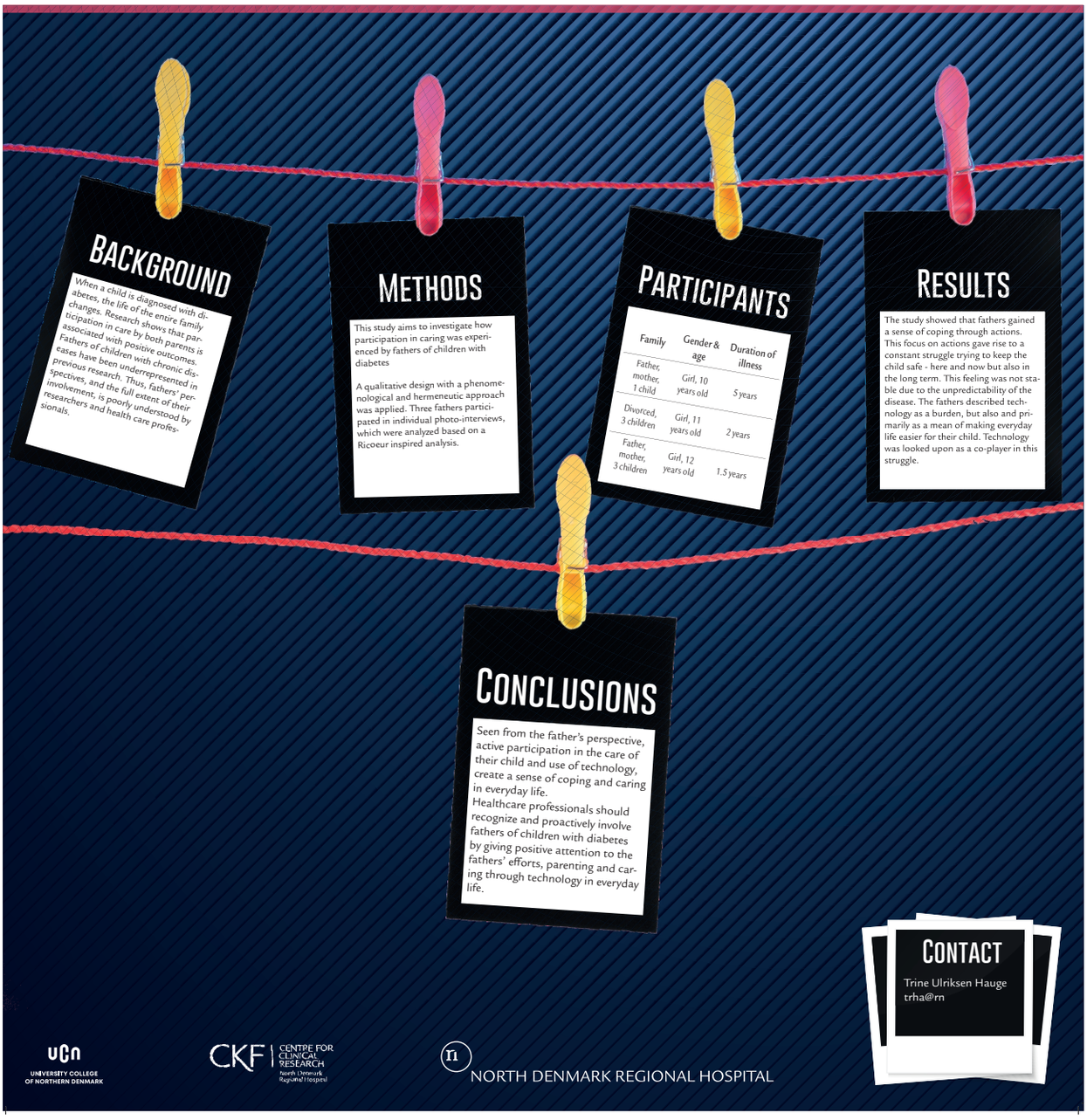
Conclusions
Seen from the father's perspective, active participation in the care of their child and use of technology, create a sense of coping and caring in everyday life. Healthcare professionals should recognize and proactively involve fathers of children with diabetes by giving positive attention to the fathers' efforts, parenting and caring through technology in everyday life.

COPING THROUGH ACTIONS AND CARING THROUGH TECHNOLOGY

– fathers' experiences of parenting a child with diabetes

Trine Ulriksen Hauge[1] • Mona Kyndi Pedersen[2, 3]

[1]School of Nursing, Health Studies, University College of Northern Denmark, Aalborg, Denmark
[2]Centre for Clinical Research, North Denmark Regional Hospital, Hjørring, Denmark
[3]Department of Clinical Medicine, Aalborg University, Aalborg, Denmark



Radiologi

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Repeated abdominal computed tomography scans within 28 days in patients in the Region North Denmark - an audit survey addressing adequacy of clinical referral information and justification of examination

Andreas H. Lauritzen[1], Thomas Hessellund[2,3], Bjarne B. Madsen[4], Signe Westmark[3], Henrik Bøggild[5], Peter Leutscher[3,6]

1. Department of Radiology, Lillebaelt Hospital, Vejle, Denmark
2. Department of Radiology, North Denmark Regional Hospital, Hjoerring, Denmark
3. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
4. Aarhus University Hospital, Aarhus, Denmark
5. Department of Health Science and Technology, Aalborg University, Aalborg, Denmark
6. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
Use of computed tomography (CT) scans is increasing in Denmark. CT scans inflict patients an increased risk of radiation-induced cancer. The aim of this audit survey was to assess adequacy of clinical referral information and justification of abdominal CT scans being repeated within 28 days of a previous identical scan in the same patient.

Methods
The survey included 100 randomly selected patients with history of two identically performed abdominal CT scans within 28 days. An external radiology consultant (auditor) reviewed the patient medical files in a blinded manner. By use of four-grade scales originating from a previously conducted national survey on justification of CT examinations in Sweden, the auditor rated the referral to a repeated CT scan as 1. *adequate*, 2. *relatively adequate*, 3. *not really adequate* or 4. *inadequate information*, respectively. Likewise, the auditor also rated justification of the repeated CT scan as 1. *justified*, 2. *most likely justified*, 3. *doubtful whether justified* or 4. *not justified*, respectively.

Results
In total, 26 % of the referrals to a repeated abdominal CT scan within 28 days were rated as *not really adequate* (12 %) or *inadequate information* (14 %). Moreover, 22 % of the scans were rated as *doubtful whether justified* (11 %), *nor justified* (11 %).

Conclusions/perspectives
This audit survey suggests that one-fourth of <28 days repeated abdominal CT scans are questionable justified. Also, in a similar proportion of the audited referrals seems to lack adequate clinical information from the clinician to the radiologist. The findings call for further critical evaluation of current CT scan practice.

Patients exposed to increased ionizing radiation due to repeated computed tomography scans – a retrospective study in the North Region of Denmark – Audit results

E-mail: thomas.h@rn.dk

Andreas Hoffmann Lauritzen[6]; Bjarne B. Madsen[2], Thomas Hessellund[1, 3], Peter D. C. Leutscher[3,5], Trine S. Jensen[3], Henrik Bøggild[4]

1. Department of Radiology, Clinic for Diagnostics, North Denmark Regional Hospital, Hjoerring, Denmark
2. Aarhus University Hospital, Aarhus, Denmark
3. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Health Science and Technology, Aalborg University, Denmark
5. Department of Clinical Medicine, Aalborg University, Denmark
6. Department of x-ray and scan, Sygehus Lillebaelt, Kolling, Denmark

Background

The number of computed tomography (CT) scans performed worldwide has increased markedly the last decade. CT scans contribute to 100-500 times more radiation than conventional radiography, mediating a serious risk for development of radiation-induced cancer. The aim of this study is to characterize the number of CT scans performed in the North Denmark Region between 2002 and 2018 and to investigate the prevalence of repeated scans without clinical indication resulting in increased harmful radiation exposure

Methods

To audit the results of the collected data, a proven study design from the National Survey on justification of CT examinations in Sweden has been used, where The auditor had to evaluate the quality of the referral as answer to the question "How is the adequacy of information assessed in the reference to 2. EXAMINATION in relation to the radiologist being able to determine the indication for the examination in question?" in a four-grade scale:

1. adequate referral,
2. relatively adequate,
3. not really adequate and
4. inadequate information.

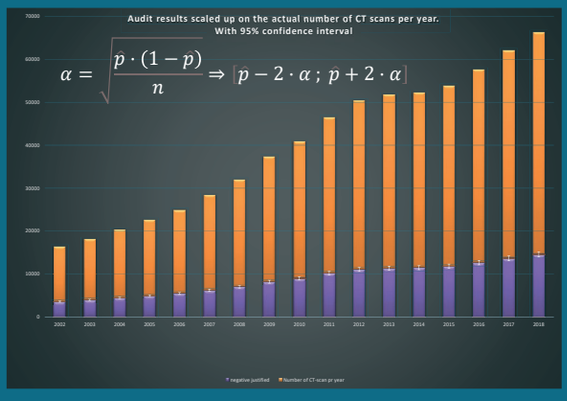
The auditor evaluated justification as the answer to the question "How is the clinical justification of the 2nd EXAMINATION assessed in relation to the already existing clinical information (Anamnesis), incl. findings from the 1st INVESTIGATION?" in a four-grade scale:

1. justified,
2. most likely justified,
3. doubtful whether justified and
4. not justified

For further clarification: Could the CT scan in the 2nd CT scan have been replaced by another radiological examination method?

Results

26 % of the of the referral is rated form relatively to not really adequate furthermore 22 % is rated from doubtful to not justified



Perspectives/Conclusion

It could give rise to significant savings if we could reduce the number of redundant scans with better utilization of existing resources while reducing the risk of radiation-induced cancer. And further more it will open up for more articles including economics and irradiation risks.

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Undersøgelse af patienternes oplevelse ved besøg i Røntgenafdelingen – LUP Røntgen

Christina Michno[1]

1. Diagnostisk Afdeling, Billeddiagnostisk Afsnit, Regionshospital Nordjylland, Hjørring

Baggrund
Røntgenafsnit i Danmark er ikke en del af Den Landsdækkende Undersøgelse af Patientoplevelser (LUP), hvor andre afsnit får den patientoplevede kvalitet undersøgt. På røntgenafsnit er der derfor en efterspørgsel efter systematisk dokumentation af patienternes oplevelser.

Design og metode
Elektronisk spørgeskemaundersøgelse udsendt til patienter via patienternes e-Boks. Spørgeskemaet har et omfang på i alt 42 tema opdelte spørgsmål

Resultaterne blev analyseret via deskriptiv statistisk ift. de kvantitative svar. De åbne kvalitative svar blev kategoriseret ift. temaerne i spørgeskemaundersøgelsen.

Population
Undersøgelsen omfattede elektive patienter, der var henvist til en billeddiagnostisk undersøgelse med en planlagt tid til undersøgelsen. Følgende patientgrupper blev ekskluderet: Patienter der var indlagte, patienter der havde fået foretaget en invasiv undersøgelse, patienter under 18 år samt patienter, der ikke var registreret med e-Boks.

Resultater
Der blev udsendt 1.111 spørgeskemaer over 2 uger - 10 hverdage.

388 patienter gennemførte hele spørgeskemaet, hvilket gav en samlet svarprocent på 35%.

98% af alle besvarelser viste at patienterne i høj grad eller meget høj grad var tilfredse med deres undersøgelsesforløb. Analysen af data viste er et behov for forbedring vedrørende:
- Manglende ankomststander
- Manglende skiltning / vejvisning til afsnittet og i afsnittet

Forbedringstiltag
På baggrund af data har afsnittet implementeret en ankomststander til det store venteområde, fornyet skiltning og vejvisning både til og i afsnittet i form af nye gulvstreger fra receptionen til venteområdet og ny skiltning til afsnittet i højhuset, ved receptionen og ved venteområdet.

Undersøgelse af patienternes oplevelse af et besøg i røntgenafsnittet - Røntgen LUP

Baggrund

Røntgenafsnit i Danmark er ikke en del af Den Landsdækkende Undersøgelse af Patientoplevelser (LUP), hvor andre afdelinger får patienttilfredsheden og den patientoplevede kvalitet undersøgt. Således er måling af den patientoplevede kvalitet i alle røntgenafsnit sparsomme og fragmenterede. På alle røntgenafsnit er der derfor en efterspørgsel efter en systematisk dokumentation af patienternes oplevelser.

En arbejdsgruppe i regi af røntgenafsnit i Region Nordjylland, Region Midtjylland og Region Syddanmark ønsker at implementere en national undersøgelse af den patientoplevede tilfredshed i de danske røntgenafsnit. Formålet er at udvikle en model, der belyser den patientoplevede kvalitet i eget røntgenafsnit på en måde, der understøtter det lokale kvalitetsarbejde, og giver mulighed for tværgående sammenligninger og læring mellem røntgenafsnittene.

Røntgenafsnittet i Hjørring har lokalt forankret de *Nationale mål for det danske sundhedsvæsen*. Projektet tager afsæt i det national mål nr. 6; *Øget patientinddragelse*. Lokalt er målet i afsnittet omsat til; *Lære med, af og om patienterne via opmærksomhed på deres forudsætninger, ønsker og behov.*

Design og metode

Elektronisk spørgeskemaundersøgelse i SurveyXact udsendes til patienter via patienternes e-Boks umiddelbart efter deres undersøgelse i røntgenafsnittet. Hvert spørgeskema udsendes sammen med informeret samtykke og et følgebrev med motivation for invitation. Spørgeskemaet har et omfang af i alt 42 spørgsmål og tager udgangspunkt i følgende temaer:

- Oplevelse af skriftlig information før undersøgelsen
- Oplevelse af modtagelse i røntgenafsnit
- Oplevelse af information i forbindelse med undersøgelsen
- Oplevelse af det sundhedsfaglige personales håndtering af undersøgelsen
- Oplevelse af information ift. undersøgelsessvar

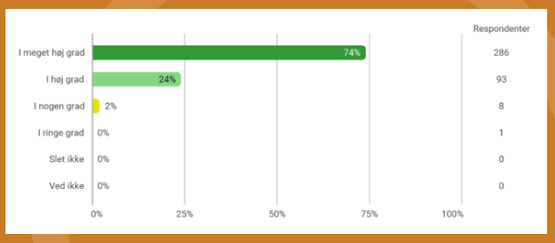
Spørgeskemaet er et struktureret spørgeskema, men med mulighed for åbne kommentarer. Resultaterne analyseres via deskriptiv statistik ift. de kvantitative svar. De åbne kvalitative svar kategoriseres ift. temaerne i spørgeskemaundersøgelsen.

Population

Undersøgelsen skal afdække elektive patienter, der er henvist til en billeddiagnostisk undersøgelse med en planlagt tid til undersøgelsen. Følgende patientgrupper ekskluderes: Patienter der er indlagte, patienter der har fået foretaget en invasiv undersøgelse, patienter under 18 år samt patienter, der ikke er registreret med e-Boks.

Resultater

Der blev udsendt 1.111 spørgeskemaer over 2 uger - 10 hverdage. 388 patienter har gennemført hele spørgeskemaet, hvilket giver en samlet svarprocent på 35%.



Patienternes samlede oplevelse af undersøgelsesforløbet i afsnittet medtænkt de 5 temaer

Der indkom op mod 200 kommentarer i de åbne svarmuligheder. Kommentarerne kategoriserer sig i følgende temaer:

- Effektivitet (hurtig behandling)
- Et venligt og imødekommende personale
- Generelt en positiv oplevelse
- Manglende ankomststander
- Manglende skiltning / vejvisning til afsnittet og i afsnittet

Forbedringstiltag

Som et lokalt delmål ift. de nationale mål, er målet at undersøge patienternes ønsker og behov, og vi har fået et resultat, der giver os mulighed for at fokusere på netop det via forbedringsprojekter.

På baggrund af samarbejde med Teknisk Afdeling har afsnittet implementeret en ankomststander ved receptionen til det store venteområde. Der er kommet ny skiltning og vejvisning både til og i afsnittet i form af nye gulvstreger fra receptionen til venteområdet og ny skiltning til afsnittet i højhuset, ved receptionen og ved venteområdet.

Patienttilfredshedsundersøgelsen gennemføres igen i uge 45 og 46 2021.

Tak

Tak til DEFACTUM for assistance med validering af spørgeskema og support. Tak til alle deltagere i arbejdsgruppen for et fantastisk samarbejde, som har muliggjort det lokale arbejde med den patientoplevede kvalitet.

Kontaktinformation

Udviklings- og kvalitetsansvarlig, Christina Michno
christina.michno@rn.dk

REGIONSHOSPITAL NORDJYLLAND

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Inter-observatør variation ved DXA-skannings undersøgelser udført på et dansk universitetshospital – et klinisk kvalitetssikringsstudie

Merete Grothe Christensen[1], Dorthe Brønnum[2], Peter Leutscher[2,3], Morten Hasselstrøm Jensen[1], Peter Vestergaard[1,3,4]

1. Steno Diabetes Center Nordjylland, Aalborg
2. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
3. Klinisk Institut, Aalborg Universitetshospital, Aalborg
4. Endokrinologisk Afdeling, Aalborg Universitetshospital, Aalborg

Baggrund
DXA-skanning udføres i henhold til internationale standarder. Eftermonitorering af DXA-skanninger, har vist afvigelser i analyser, i forhold til standarden f.eks. afvigelser fra oprindelig anatomi, billedkvalitet eller individuel billedanalyse. Studiets formål er at undersøge kvaliteten af DXA-skanningsanalyser.

Metode
I et retrospektivt kvalitetssikringsstudie undersøgtes DXA-skanningsbilleder af lænderyg (n=21) og hofte (n=18), til vurdering af kvalitet og validitet i forhold til anvendt standard DXA-skanningsanalysering. DXA-skanningerne udførtes på ambulante patienter i Endokrinologisk Ambulatorium, Aalborg Universitets Hospital, en tilfældig arbejdsdag i november 2020, med anvendelse af tre Hologic, Horizon Bone Densitometry systemer, Software version 13.6.0.5:3. DXA-skanninger af ryg og hofte blev re-analyseret af en ekspert. Rutineanalysen blev sammenlignet med ekspertanalysen. En t-test anvendtes for at teste om middelværdierne fra de to observatørers analyser kunne antages at være identiske.

Resultater
Sammenligningen af DXA-skanningerne, viste en gennemsnitlig interobservatørdifferens på 0,03 (SD=0,3, p=0,72) for ryg, og 0,0 (SD=0,1, p=0,33) for hofte neck boks og 0,10 (SD=0,1, p<0,01) for hofte total.

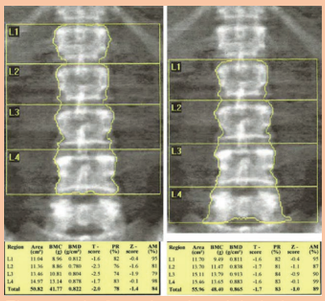
Konklusion
Resultaterne viste ingen klinisk eller signifikant forskel i interobservatør variation for ryg total og hofte neck boks. Forskellen for hofte total var signifikant, dog med lille absolut forskel uden klinisk betydning. Resultaterne indikerer at kvaliteten af DXA-scanningsresultaterne er gode og yderligere undervisning ikke er nødvendig.

Variation ved DXA-skannings undersøgelser

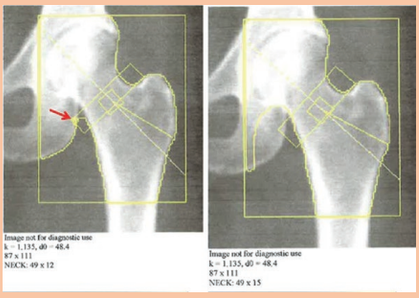
Merete Grothe Christensen, Dorthe Brønnum, Peter Leutscher,
Morten Hasselstrøm Jensen, Peter Vestergaard

Baggrund

DXA-skanning udføres i henhold til internationale standarder. Eftermonitorering af DXA-skanninger, har vist afvigelser i analyser, i forhold til standarden f. eks. afvigelser fra oprindelig anatomi, billedkvalitet eller individuel billedanalyse. Studiets formål er at undersøge kvaliteten af DXA-skanningsanalyser.



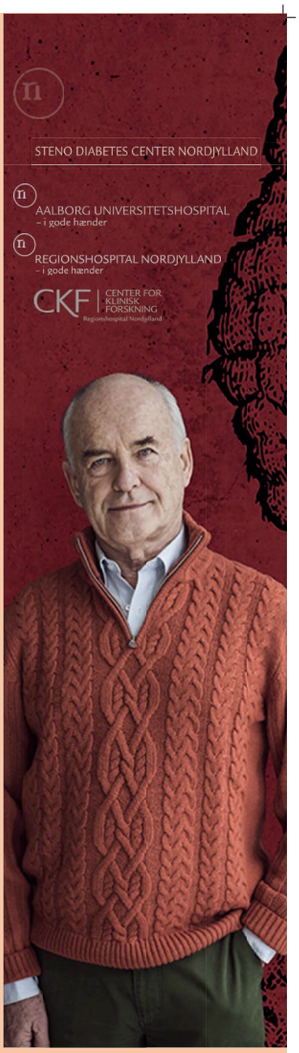
Eksempel på analyse lændehvirvler

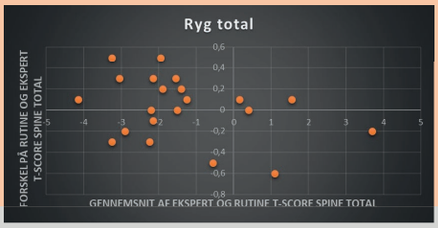


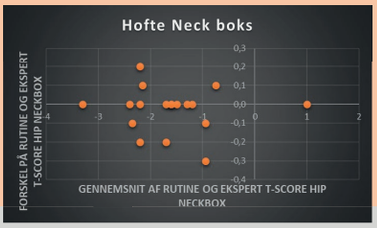
Eksempel på analyse af Neck boksen.

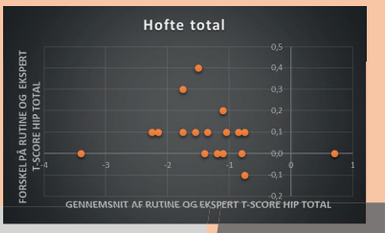
Metode

I et retrospektivt kvalitetssikringsstudie undersøgtes DXA-skanningsbilleder af lænderyg (n=21) og hofte (n=18), til vurdering af kvalitet og validitet i forhold til anvendt standard DXA-skanningsanalysering. DXA-skanningerne udførtes på ambulante patienter i Endokrinologisk Ambulatorium, Aalborg Universitets Hospital, en tilfældig arbejdsdag i november 2020, med anvendelse af tre Hologic, Horizon Bone Densitometry systemer, Software version 13.6.0.5:3. DXA-skanninger af ryg og hofte blev re-analyseret af en ekspert. Rutineanalysen blev sammenlignet med ekspertanalysen. En t-test anvendtes for at teste om middelværdierne fra de to observatørers analyser kunne antages at være identiske.









Resultater

Sammenligningen af DXA-skanningerne, viste en gennemsnitlig interobservatørdifferens på 0,03 (SD=0,3, p=0,72) for ryg, og 0,0 (SD=0,1, p=0,33) for hofte neck boks og 0,10 (SD=0,1, p<0,01) for hofte total.

Konklusion

Resultaterne viste ingen klinisk eller signifikant forskel i interobservatør variation for ryg total og hofte neck boks. Forskellen for hofte total var signifikant, dog med lille absolut forskel uden klinisk betydning. Resultaterne indikerer at kvaliteten af DXA-scannings resultaterne er gode og yderligere undervisning ikke er nødvendig.

For mere information
Merete Grothe Christensen
meretegrothe.christensen@rn.dk
Tel.: +4561364936

ID 2021-165 Region Nordjylland

Sundhedsfaglig uddannelse

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“Am I good enough?” - The mental well-being of newly graduated doctors

Emil Lønstrup Øhrstrøm[1,2], Peter Leutscher[1,3], Helle Haslund-Thomsen[3]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Anaesthesiology, North Denmark Regional Hospital, Hjoerring, Denmark
3. Clinical Institute, Aalborg University, Aalborg, Denmark

Background
The work as a medical doctor is characterized by high workload and major responsibility for patients causing a stressful work life, which may have a negative impact on the private life with the development of mental illness. Especially newly graduated doctors (NGD) are at risk of stressors in their work life.

This study aims to investigate the mental well-being of NGD focusing on the patient related work compared to more experienced junior doctors (EJD).

Methods
The strategy for collecting data is twofold; Firstly, two separate group interviews are conducted with some NGD (n=4) at the North Denmark Regional Hospital, exploring their thoughts about stressors in work life. Secondly a questionnaire is being developed on the basis of the findings in the interviews. Validated questionnaires in the form of MDI (depression scale) and WHO-5 (well-being-index) are incorporated in the distributed questionnaire. The questionnaire is being sent to NGD and EJD in the North Denmark Region.

Statistical analysis is being done using R software comparing data using dependent unpaired t-tests. The shapiro wilk test is performed to control for normal distribution.
Results
Study outcome is expected to be reported by November 2021.

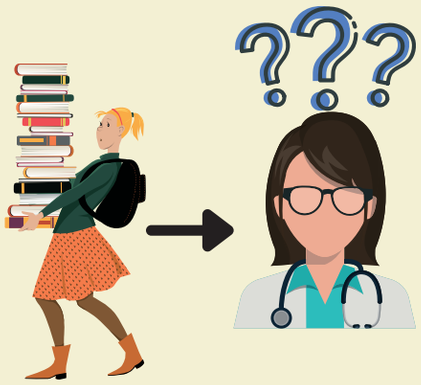
Perspectives
It is expected that the study will collect important new information about the work-life among NGD aiming to develop appropriate stress-reducing strategies to facilitate the transition from medical school to the hospital setting.

"AM I GOOD ENOUGH?"

The mental well-being of newly graduated doctors

AUTHORS Emil Loenstrup Oehrstroem(1), Helle Haslund-Thomsen (2,3), Peter Leutscher (3,4)

AFFILIATIONS
(1) Department of Anaesthesiology, North Denmark Regional Hospital, Hjoerring, Denmark
(2) Clinical Nursing Research Unit, Aalborg University Hospital
(3) Clinical Institute Aalborg University
(4) Centre for Clinical Research North Denmark Regional Hospital



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Firstly, two separate group interviews are conducted with some NGD (n=4) at the North Denmark Regional Hospital, exploring their thoughts about stressors in work life.
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Statistical analysis is being done using R software comparing data using dependent unpaired t-tests. The shapiro wilk test is performed to control for normal distribution.

COLLECTION OF DATA

Focus group interview

↓

Questionnaire including WHO5 and MDI

↓

Distributed online to junior doctors in the North Denmark Regions

↙ ↓ ↘

135 (all) NGD | 50 first phase EJD | 50 second phase EJD

RESULTS

Results will show the mental well-being of NGD compared to EJD.

Study outcome is expected to be reported by November 2021.

PERPECTIVES

It is expected that the study will collect important new information about the work-life among NGD aiming to develop appropriate stress-reducing strategies to facilitate the transition from medical school to the hospital setting.

KEY POINTS

The transition from being a student to a doctor can be overwhelming and stressful

This study investigates the mental well being of newly graduated doctors through interviews and questionnaires

Results expected end of November 2021

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NORTH DENMARK REGION

48

Kliniske vejlederes opfattelser og brug af begrebsrammen Fundamentals of Care i vejledning af sygeplejestuderende

Gitte Nordendorff Nielsen[1], Siri Lygum Voldbjerg[1,2], Britt Laugesen[2], Mona Østergaard Klit[3], Karen Lyng Larsen[4]

1. UCN, Hjørring
2. Forskningsenhed for Klinisk Sygepleje, Aalborg Universitetshospital, Aalborg
3. HR og Uddannelse, Aalborg Universitetshospital, Thisted
4. Team Kvalitet og Patientsikkerhed, Regionshospital Nordjylland, Hjørring

Baggrund
Kliniske vejledere spiller en central rolle i sygeplejestuderendes udvikling af fagidentitet. Der er få undersøgelser som undersøger, hvordan kliniske vejledere kan understøttes i deres vejledningspraksis. Dette studie undersøger, hvordan kliniske vejledere anvender begrebsrammen Fundamentals of Care i klinisk praksis, når de skal støtte de studerende i opbyggelse af fagidentitet og forståelse af sygeplejens kompleksitet.

Metoder
12 kliniske vejledere ansat på medicinsk, kirurgisk og psykiatrisk afsnit i Region Nordjylland deltog i fokusgruppeinterviews (Morgan 1997, Halkier, 2010). Tre fokusgruppeinterviews foregik ved fysisk tilstedeværelse og ét på Teams. Alle interviews blev optaget og transskriberet. Tekst materialet blev efterfølgende analyseret af forskergruppen med anvendelse af tematisk analyse (Braun & Clarke, 2006).

Foreløbige resultater
De kliniske vejledere oplever, at begrebsrammen Fundamentals of Care kan være med til at strukturere sygeplejestuderendes læringssituation og styrke deres faglige og videnskabelige belæg for at yde sygepleje. Begrebsrammen sætter fokus på de studerendes relation til patienten og kan skabe et fælles afsæt mellem teoretiske og kliniske uddannelsesforløb. Endvidere oplever vejlederne, at integration af begrebsrammen kan styrke og udvikle deres egen faglighed som vejledere.

Foreløbige konklusioner og mulige perspektiver
Inddragelse af begrebsrammen i vejledningssituationer kan skabe fokus på at evidensbasere sygepleje, idet anvendelsen ligger op til brug af faglig viden/teorier/filosofier.

- Begrebsrammen kan skabe fokus på konsekvent at yde personcentreret sygepleje.
- Understøtte sygeplejestuderendes kompetencer i fagligt at argumentere for sygepleje tværprofessionelt og tværsektorielt.
- Understøtte sygeplejestuderendes kompetencer i at kunne reflektere over kontekstens betydning for sygepleje og argumentere for sygepleje på det organisatoriske og politiske niveau.
- Styrke og udvikle kliniske vejlederes vejledningspraksis.

Kliniske vejlederes opfattelser og brug af begrebsrammen Fundamentals of Care i vejledning af sygeplejestuderende

Gitte Nordendorff Nielsen[1], Karen Lyng Larsen[2], Mona Østergaard Klit[3], Britt Laugesen[4], Siri Lygum Voldbjerg[4,5]
1. Sygeplejerskeuddannelsen UCN, Hjørring, Danmark
2. Hospitalets stab, Kvalitet og Patientsikkerhed, Regionshospital Nordjylland, Hjørring, Danmark
3. Sygeplejerskeuddannelsen UCN, Thisted, Aalborg Universitetshospital, Danmark
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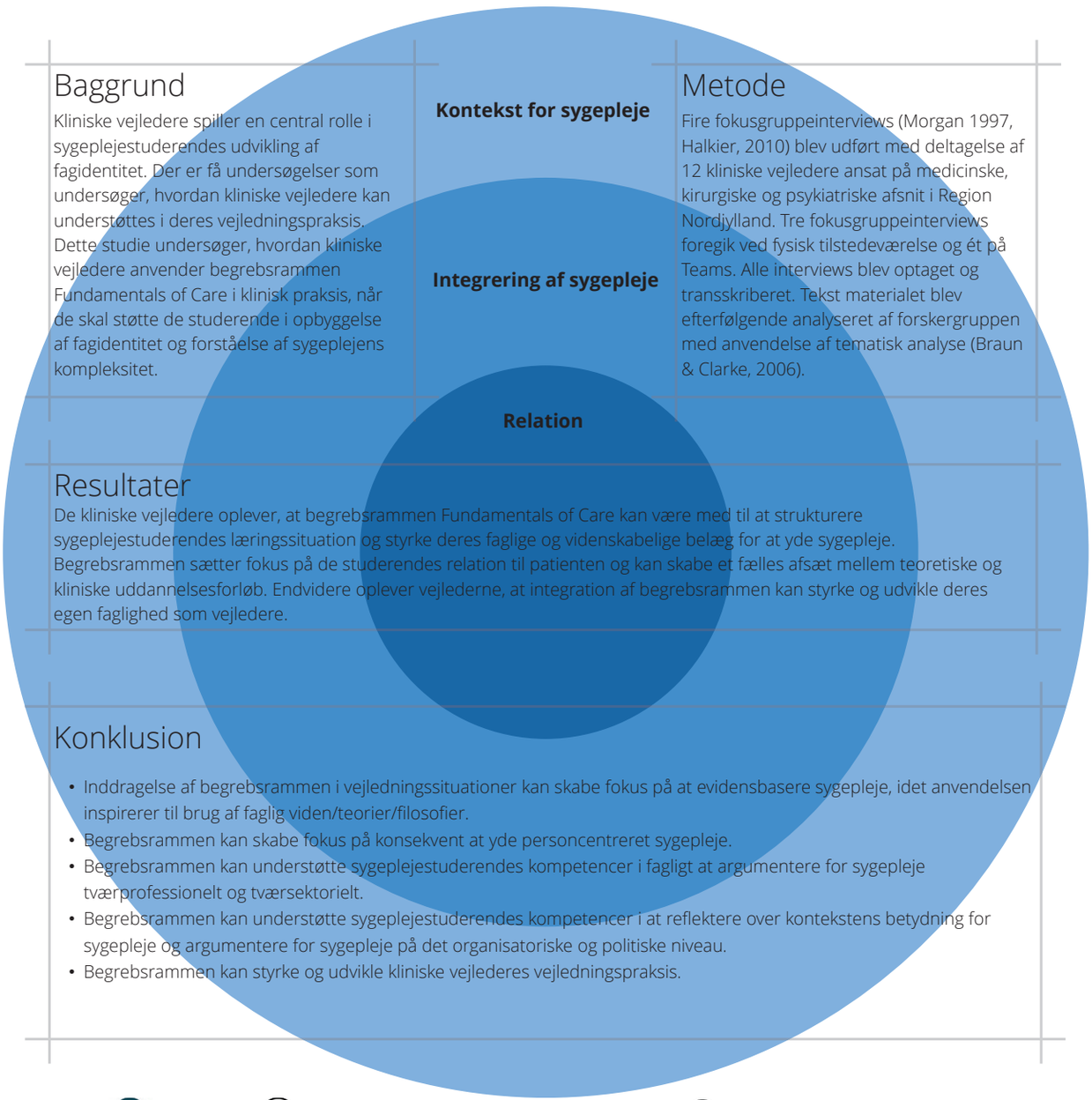

Metode

Fire fokusgruppeinterviews (Morgan 1997, Halkier, 2010) blev udført med deltagelse af 12 kliniske vejledere ansat på medicinske, kirurgiske og psykiatriske afsnit i Region Nordjylland. Tre fokusgruppeinterviews foregik ved fysisk tilstedeværelse og ét på Teams. Alle interviews blev optaget og transskriberet. Tekst materialet blev efterfølgende analyseret af forskergruppen med anvendelse af tematisk analyse (Braun & Clarke, 2006).

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De kliniske vejledere oplever, at begrebsrammen Fundamentals of Care kan være med til at strukturere sygeplejestuderendes læringssituation og styrke deres faglige og videnskabelige belæg for at yde sygepleje. Begrebsrammen sætter fokus på de studerendes relation til patienten og kan skabe et fælles afsæt mellem teoretiske og kliniske uddannelsesforløb. Endvidere oplever vejlederne, at integration af begrebsrammen kan styrke og udvikle deres egen faglighed som vejledere.

Konklusion

- Inddragelse af begrebsrammen i vejledningssituationer kan skabe fokus på at evidensbasere sygepleje, idet anvendelsen inspirerer til brug af faglig viden/teorier/filosofier.
- Begrebsrammen kan skabe fokus på konsekvent at yde personcentreret sygepleje.
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- Begrebsrammen kan styrke og udvikle kliniske vejlederes vejledningspraksis.

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Uro-Gynækologi og Obstetrik

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Validity of five obstetric indicators and evaluation of quality measurements in the Danish Medical Birth Register

Akash Meegoda[1], Anna Larsen[1,2], Sanna Gunnarstein[1,2], Símun Ingi Arge[1,2], Louise Thomsen Schmidt Arenholt[1,2,3], Lars Burmester[1], Mimma Bakkali[1]

1. Department of Obstetrics and Gynecology, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark

Background
Obstetric intervention and procedure codes related to all births in Denmark are registered in the Danish Medical Birth Register (DMBR). Evaluation of validity of the codes reported from North Denmark Regional Hospital has never been made. Therefore, the aim of this study was to validate 12 obstetric interventions/procedures codes and three quality parameters, by comparing the codes reported by the hospital to DMBR with medical records used as golden standard.

Method
In all, 12 obstetric intervention/procedure codes (for example C-section and sphincter rupture) and three quality parameters (for example bleeding measurement and notification of acute C-section)) from 2019 and 2020 was extracted from the DMBR and compared to the medical records. Errors in the coding were recorded as either missing, multiple or incorrect and validity was assessed by sensitivity, specificity, positive predictive value and negative predictive value. Values ≥80% were considered acceptable.

Results
2,419 births were identified. Procedure/intervention-codes: Four codes had an unacceptable sensitivity and NPV (acute c-section before birth and during birth earlier than planned, elective c-section and suture of complete perineal rupture) together with an unacceptable NPV for coding of grade 3a perineal rupture. All indicators had an acceptable specificity and NPV. Evaluating quality measurements errors were found in 1.0-59.3% of the codes.

Conclusion
For most of the codes an acceptable validity was found, but for some data must be used with caution. More focus should be put on optimizing the coding procedure so that birth data from North Denmark Regional Hospital can be used in future clinical and registry-based studies.

Validity of five obstetric indicators and evaluation of quality measurements in the Danish Medical Birth Register

Akash Meegoda1, Anna Larsen1, Sanna Gunnarstein1, Simun Ingi Arge1, Lars Burmester2, Mimma Bakkali2 , Louise Arenholt 2,3,4
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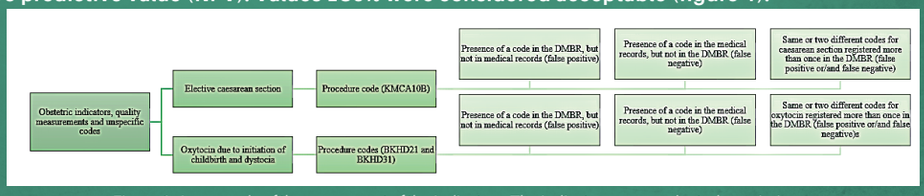

Figure 1: An example of the assessment of the indicators. The indicators were evaluated on missing, incorrect or/and plural codes by comparing the medical records to the Danish Medical Birth Register

Results:

In all, 2,419 births were identified. Procedure/intervention-codes: Four codes had an unacceptable sensitivity and PPV (acute c-section before birth and during birth earlier than planned, elective c-section and suture of complete perineal rupture) together with an unacceptable PPV for coding of grade 3a perineal rupture (table 1). All indicators had an acceptable specificity and NPV. Evaluating quality measurements errors were found in 1.0-59.3% of the codes (table 2).

Quality measurements	Total		
	Total number of the selected quality measurements	Errors	Errors %
Bleeding measurement	2416	25	1
Report of grade 1, 2 or 3 caesarean section	312	185	59,3
Report of epidural analgesia	488	159	32,6

Figure 2: The total number of the three quality measurements and the amount of registered errors as well as the calculated error percentage for the years 2019 and 2020 combined.

Sensitivity, specificity, PPV and NPV for the five obstetric indicators for the years 2019 and 2020

Intervention codes	Sensitivity	Specificity	PPV	NPV
Oxytocin due to initiation of birth (BKHD21)	85.1 (79.2-89.9)	99.3 (98.9-99.6)	91.4 (86.5-94.7)	98.8 (98.3-99.1)
Oxytocin due to dystocia (BKHD31)	93.8 (91.2-95.9)	98.7 (98.1-99.2)	94.4 (92.0-96.2)	98.6 (98.0-99.0)
ECS before birth (KMCA10A)	71.4 (60.5-80.8)	99.3 (98.8-99.6)	77.9 (63.3-85.2)	99.0 (98.6-99.3)
ECS during birth, earlier-than-planned (KMCA10D)	63.3 (43.8-80.1)	99.8 (99.5-99.9)	76.0 (57.7-88.1)	99.5 (99.3-99.7)
ECS during birth (KMCA10E)	89.4 (84.4-93.3)	98.9 (98.4-99.3)	88.6 (83.9-92.0)	99.0 (98.5-99.3)
Elective caesarean section (KMCA10B)	71.4 (41.9-91.6)	99.8 (99.6-100)	71.4 (47.1-87.5)	99.8 (99.6-99.9)
Delivery with starting vacuum extraction Delivery with high or medium high vacuum extraction Failed delivery by vacuum extraction (KMAE00/03/20)	93.0 (88.1-96.3)	99.7 (99.4-99.9)	96.4 (92.3-98.3)	99.5 (99.1-99.7)
Epidural analgesia (NAAD0B)	95.9 (93.9-97.5)	100 (99.7-100)	99.8 (96.8-100)	98.9 (98.4-99.3)
Birth lesion with partial rupture of external anal sphincters (<50%), grade 3a (DO702D)	92.0 (74.0-99.0)	99.8 (99.5-99.9)	79.3 (63.1-89.6)	99.9 (99.7-100)
Birth lesion with total rupture of external anal sphincters (>50%), grade 3b (DO702E)	84.4 (67.2-94.7)	99.9 (99.7-100)	93.1 (77.0-98.2)	99.8 (99.5-99.9)
Birth lesion at birth, grade 4 (DO703)	100 (59.0-100)	100 (99.9-100)	100 (100)	100 (100)
Suture of complete perineum rupture after birth (KMBC33)	75.0 (61.6-85.6)	99.4 (99.0-99.7)	75.0 (63.5-83.8)	99.4 (99.1-99.6)

Figure 3: The sensitivity, specificity, positive predictive value and negativ predictive value for the selected indicators for the years 2019 and 2020 combined were calculated with a binominal proportion CI 95%. Results below the acceptable range are marked with red.

Conclusion:

For most of the codes an acceptable validity was found, but for some data must be used with caution. More focus should be put on optimizing the coding procedure so that birth data from North Denmark Regional Hospital can be used in future clinical and registry-based studies.

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The effect of isoflavones and estrogen on the gene expression pattern in urothelial cells

Annemarie Brusen Villadsen[1,2], Per Bendix Jeppesen[3], Louise Thomsen Schmidt Arenholt[1,2,4], Suzette Sørensen[1,2]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Department of Clinical Medicine, Aarhus University, Aarhus, Denmark
4. Department of Obstetrics and Gynecology, North Denmark Regional Hospital, Hjoerring, Denmark

Background
Estrogen hormone replacement therapy is used to relieve menopause-associated vasomotor symptoms and reduce bladder symptoms in postmenopausal women. Isoflavones (estrogen-like compounds from soya and red clover) have proven efficient in some cases as an alternative to estrogen. Importantly, isoflavones selectively target the estrogen beta-receptor opposed to the alpha-receptor, which is found at high levels in cancer sensitive tissues (breast and ovary). Isoflavones may therefore be a safer alternative to estrogen treatment, however not definitely proven. Since the bladder has high expression of the estrogen beta-receptor, we speculate that isoflavone intake could be used as a treatment for bladder problems in postmenopausal women. The aim of this study is therefore to investigate, at the molecular level, the effect of isoflavone vs estrogen stimulation on bladder epithelial cells grown in culture.

Methods
Three bladder cancer cell lines are treated with different concentrations of 17β-estradiol or selected isoflavones (equol, formononetin, Biochanin A, Daidzein, and Genistein). The effect on cell growth is assessed using a cell proliferation assay. RNA from treated cells are harvested and sequenced to investigate changes in the gene expression. Moreover, cellular pathways triggered in response to isoflavones *in vitro* are validated in human material.

Results
Preliminary data on cell viability and proliferation will be presented.

Conclusions
The results of this study will give us important information on the mechanisms of actions of isoflavones vs estrogen on bladder epithelial cells. This will help us to understand how estrogen functions in symptom relief of bladder disorders, and if isoflavones could be considered a safer choice.

THE EFFECT OF ISOFLAVONES AND ESTROGEN ON THE GENE EXPRESSION PATTERN IN UROTHELIAL CELLS

Annemarie Brusen Villadsen[1,2], Per Bendix Jeppesen[3], Louise Thomsen Schmidt Arenholt[1,2,4], Suzette Soerensen[1,2]
1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark, 2. Department of Clinical Medicine, Aalborg University, Denmark,
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Funding: Ulla and Mogens Folmer Andersens grat, Niels Jensen research grant, Marie Pedersen and Jensine Heibergs grant

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References:
1. Vestergaard P. et. *al*. Effect of 5 years of hormonal replacement therapy on menopausal symptoms and blood pressure – a randomised controlled study. Maturitas. 2003 Oct 20;46(2):123-32.
2. Chen M-N et. *al*. Efficacy of phytoestrogens for menopausal symptoms: a meta-analysis and systematic review. Climacteric. 2015 Apr 4;18(2):260–9.
3. Kuiper GG et. *al*. Comparison of the ligand binding specificity and transcript tissue distribution of estrogen receptors alpha and beta. Endocrinology. 1997 Mar;138(3):863–70.

Expected outcome

The results of this study will give us important information on the mechanisms of actions of isoflavones vs estrogen on bladder epithelial cells. This will help us to understand how estrogen functions in symptom relief of bladder disorders, and if isoflavones could be considered an alternative, and maybe safer choice.

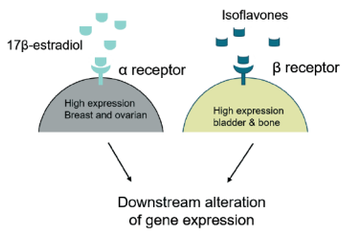

Figure 3 I Molecular pathways of estrogen receptors. *Demonstrating the alpha and beta estrogen receptors. Isoflavones selectively target the beta estrogen receptor highly expressed in bladder and bone tissue. Estradiol targets both the alpha and beta estrogen receptors. The alpha estrogen receptor is highly expressed in breast and ovarian tissue*

EXPERIMENTAL SETUP

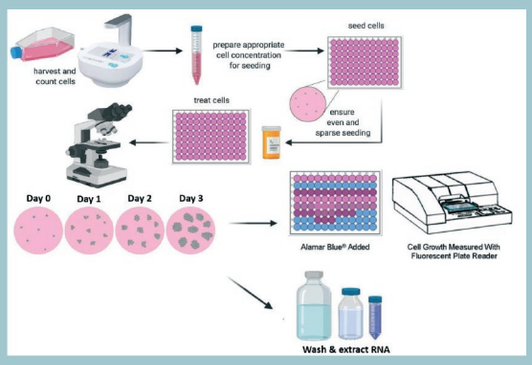

Figure 1 I Experimental setup investigating the effect of isoflavones and 17β-estradiol on cell growth using the AlamarBlue® HS cell viability assay*. Cells are harvested and seeded into 96-well plates. The next day the cells are treated with different concentrations of isoflavones and 17β-estradiol. After 24, 48 and 72 h the Alamar Blue® HS reagent is added to the cells and the viability of the cells are measured. Moreover, RNA is extracted after 24 h of treatment to investigate altered gene expression. Picture modified from CytoSMART Technologies .*

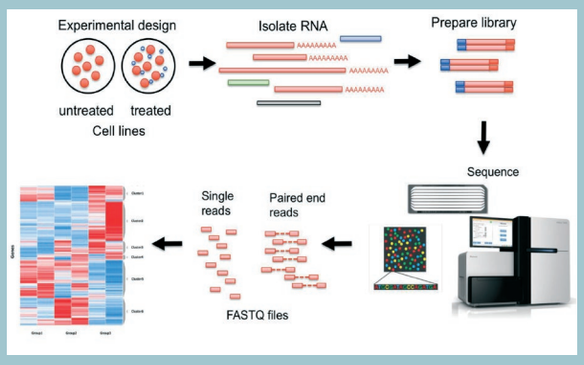

Figure 2 I RNA sequencing of isoflavone- and 17β-estradiol-treated or untreated bladder epithelial cells investigating differences in the gene expression. *Isolated RNA is converted to complementary DNA before library preparation. The library is sequenced, and the resulting reads are subjected to bioinformatic analysis.*

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Livskvalitet og patientforløb. Er Lichen sklerosus opfølgningsmøde en god indsats?

Constanze Merkel[1], Tina Heilesen[1], Kirsten Vorre[2]

1. Gynækologisk og Obstetrisk Afdeling, Regionshospital Nordjylland, Hjørring
2. Team Kvalitet og Patientsikkerhed, Regionshospital Nordjylland, Hjørring

Baggrund
Lichen sklerosus er en kronisk hudsygdom som overvejende rammer postmenopausale kvinder og præpubertære piger. Hyppigste symptomer er svien og kløe i vulva- og analregion, samt skrumpninger og forandringer på huden. Senfølger kan være smerter ved samleje og cykling, rifter, revner og blødning. Ubehandlet kan der udvikles celleforandringer, som kan føre til vulvacancer. Grundig information om sygdommen er en væsentlig forudsætning for patienternes compliance og behandlingsadhærens.

Afdelingen for kvindesygdomme, graviditet og fødsel etablerede derfor i 2020 et Lichen sklerosus opfølgningsmøde (LOM) til kvinder diagnosticeret med Lichen sklerosus.

Metode
Prospektivt, kvalitativt studie af deltagernes vurderinger af LOM i perioden september 2020 til september 2021 ift. tilfredshed med informationsomfang, formidling og mødeform.

Der gennemføres to spørgeskemaundersøgelser. Første undersøgelse forgår umiddelbart ved afslutning af LOM: et papirskema indeholdende ni spørgsmål, overvejende med ja/nej svarmuligheder samt muligheden for at give uddybende kommentarer. Ved undersøgelsen spørges ind til den enkelte deltagers oplevelse af indhold og rammen for LOM. Anden spørgeskemaundersøgelse foregår tre måneder efter LOM via et elektronisk spørgeskema, der udsendes til deltagerne via mail, indeholdende 22 spørgsmål og ligeledes udformet med ja/nej svarmuligheder samt muligheden for at give uddybende kommentarer.

Via spørgeskemaerne gives deltagerne muligheden for at beskrive deres oplevelse af forløbet fra forundersøgelsen i ambulatoriet til afsluttende opfølgningsmøde (LOM). Alle deltagere som har udfyldt første spørgeskema tilsendes andet skema 3 måneder efter deltagelse ved LOM.

Resultat
Præsenteres ved forskningssymposiet

Perspektiv
Ud fra de indsamlede data identificeres indsatsområder til forbedring af patienternes forløb og dermed kvindernes livskvalitet.

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LIVSKVALITET OG PATIENTFORLØB

Er Lichen Sklerosus Opfølgningsmøde (LOM) en god indsats?

Constanze Merkel[1], Tina Heilesen[1], Kirsten Vorre[2]
[1] Afdeling for kvindesygdomme, graviditet og fødsel, [2] Team Kvalitet og Patientsikkerhed

BAGGRUND

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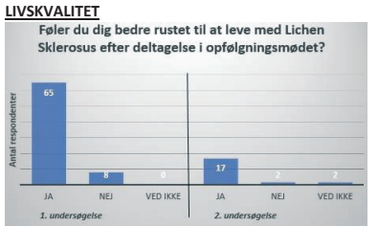
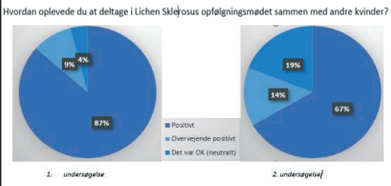
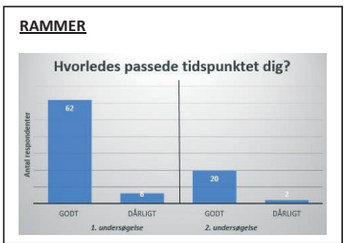
LIVSKVALITET





RAMMER



KONKLUSION

- Undersøgelsen har vist at kvinderne er overordnet meget tilfredse med LOM. Kvinderne føler sig "meget bedre rustet til at leve med Lichen Sklerosus". Der er stor tilfredshed med mødets opsætning og struktur.
- Kvinderne giver gode input til/efterspørger mere information om f.eks. antiinflammatorisk kost, seksualitet.
- Der planlægges aktuelt en opdatering af undervisningsforløbet og -materialet.
- Der planlægges med fortløbende spørgeskemaundersøgelse af kvindernes tilfredshed med undervisningen (indhold og rammer), betydning for kvindernes livskvalitet, behandlingscompliance og behandlingsadhærens med spørgeskema.
- Resultaterne vil indgå i afdelingens planlægning af patientforløb for kvinder med Lichen Sklerosus.

Kvindesygdom, graviditet og fødsel, Regionshospital Nordjylland

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Pessarbehandling- en langsigtet løsning eller kun en midlertidig behandling inden operation

Constanze Merkel[1], Louise Thomsen Schmidt Arenholt[1,2,3]

1. Gynækologisk og Obstetrisk Afdeling, Regionshospital Nordjylland, Hjørring
2. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
3. Klinisk Institut, Aalborg Universitet, Aalborg

Baggrund

Prolaps af vaginalvæggen er et hyppigt symptom hos kvinder, der har født børn. De fleste kvinder med symptomgivende prolaps ønsker behandling – enten i form af en operation eller med et støttepessar, der appliceres i skeden. Pessarbehandlingen er ofte et godt førstevalg. Specielt for ældre kvinder og kvinder med recidiv prolaps er pessarbehandling nogle gange det eneste valg. Pessarbehandlingen kan dog være forbundet med komplikationer såsom blødning, smerter, udflåd, således det kan blive nødvendigt at tilbyde en operation. Ligeledes kan faktorer som højt BMI, kompliceret prolaps, mange børnefødsler mm være af betydning for behandlingens effekt.

I denne retrospektive pilotundersøgelse skal pessarbehandlingens effektivitet vurderes ligesom der skal belyses faktorer, som har betydning for om patienten efter primærbehandling med støttepessar vælger operation.

Metode

Retrospektiv pilotundersøgelse med inklusion af ca. 50 patienter
Inklusionskriterier: behandling i perioden 2017-2019 på Regionshospital Nordjylland for nedsynkning af den vaginale forvæg (ICD10: DN811) med vaginalpessar for prolaps (OPS BJDZ0).

Det skal belyses, hvor mange patienter alene blev behandlet med vaginalpessar for prolaps og hvor mange patienter der endte med operativ behandling efter deres pessarbehandling og i givne fald efter hvilken behandlingsvarighed. Årsager til behandlingsskift samt faktorer af betydning for dette skal kortlægges ved gennemgang af patientjournaler, herunder alder, vægt, prolapsgrad, pessar type og komplikationer.

Resultat

Der forligger endnu intet resultat, men det forventes publiceret til "Forskningssymposiet"

Konklusion

Resultaterne skal anvendes til at optimere behandling af kvinder med forvægsprolaps ved at definere faktorer, som kan understøtte beslutningsprocessen for valget af den optimale primære behandling til den enkelte kvinde.

Pessarbehandling - en langsigtet løsning eller kun en midlertidig behandling inden operation

Constanze Merkel1, Louise Arenholt1,2,3

1Afdeling for kvindesygdomme, graviditet og fødsler, Regionshospital Nordjylland, 2Center for Klinisk Forskning, Regionshospital Nordjylland, 3 Klinisk Institut, Aalborg Universitet

Baggrund:

Prolaps af vaginalvæggen og urininkontinens er hyppige symptomer hos kvinder, der har født børn. De fleste kvinder med symptomgivende prolaps og/eller inkontinens ønsker behandling - enten i form af en operation eller med et støttepessar, der appliceres i skeden. En pessarbehandling er ofte et godt førstevalg (og for nogle eneste valg) for ældre kvinder.
I denne retrospektive undersøgelse skal pessarbehandlingens effektivitet vurderes og der skal ligeledes prøves at identificere parametre eller faktorer, som har betydning for patientens ønske om at vælge en operation efter behandling med støttepessar.

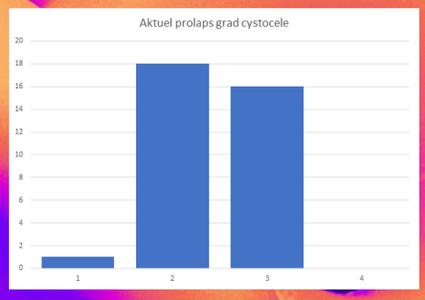
Metode:

Retrospektiv pilotundersøgelse med inklusion af 35 patienter. Inklusionskriterier: opstart af behandling i perioden 2017-2019 på Regionshospital Nordjylland for nedsynkning af den vaginale forvæg (ICD10: DN811) med vaginalpessar for prolaps (OPS BJDZ0). Det skal belyses, hvor mange patienter alene blev behandlet med vaginalpessar for prolaps og hvor mange patienter der endte med operativ behandling efter deres pessarbehandling og i givne fald efter hvilken behandlingsvarighed. Årsager til behandlingsskift samt faktorer af betydning for dette skal kortlægges ved gennemgang af patientjournaler, herunder alder, vægt, prolapsgrad, pessar type og komplikationer.

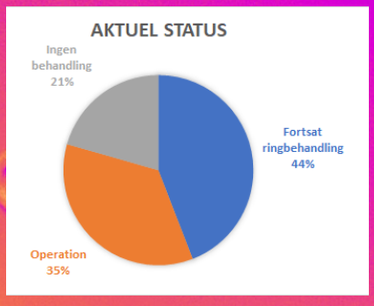
Resultater: 35 kvinder med medianalder på 71 år blev inkluderet (tabel 1). Alle kvinder blev initielt diagnosticeret med cystocele (Grad 1: 1 (2.9%), grad 2: 18 (51.4%), grad 3: 16(45.7%) (figur 1). I alt er15 (44%) kvinder fortsat i ringbehandling mens 12 (35%) er blevet opereret og 7 (21%) ophørte med ringbehandlingen uden anden alternativ behandling. De hyppigste komplikationer til ringbehandling var øget vaginalt udflod samt dårlig støtte af ringen, der medførte et tab af denne (figur 3).

Kohorte (N=35)	
Ryger, N (%)	4 (11,4%)
Body Mass Index (median), N (%)	24,4 kg/m^2
ASA-Score, N (%)	
1	9 (26,5%)
2	19 (55,9%)
3	7 (20,6%)
4	0 (0%)
Seksuel aktiv, N (%)	16 (47,1%)
Antal vaginale fødsler, N (%)	
0	1 (2,9%)
1	2 (5,9%)
2	22 (64,7%)
3	5 (14,7%)
4	2 (5,9%)
5	2 (5,9%)
Antal kejsersnit, N (%)	0 (0%)
Postmenopausal, N (%)	34 (97,1%)
Tidligere hysterektomi, N (%)	6 (17,1%)
Tidligere operation for prolaps, N (%)	7 (20,0%)

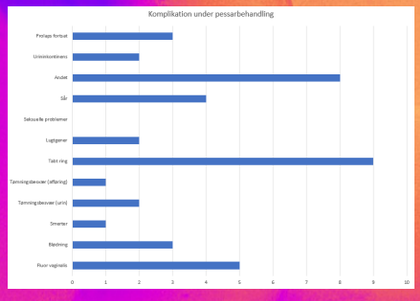
Tabel 1: Kohorteanalyse



Figur 1



Figur 2



Figur 3

Konklusion: En præliminær dataanalyse viser, at 44% af de inkluderede patienter fortsat er i behandling med prolapsringe. Når der foreligger data af flere inkluderede skal der laves yderligere statistiske korrelationer med hindblik på at se på sammenhæng mellem tidligere operationer, prolapsgrad, komplikationer og behandlingvarigheden med prolapsring for at identificere årsagen for behandlingsskift hen til et operativt indgreb. Resultaterne skal anvendes til at optimere behandling af kvinder med forvægsprolaps ved at definere faktorer, som kan understøtte beslutningsprocessen for valget af den optimale primære behandling til den enkelte kvinde.

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The impact of psychosexual counseling in women with lichen sclerosus - a Randomized Controlled Trial

Gitte Vittrup[1], Signe Westmark[2], Johannes Riis[2], Lisbeth Mørup[1], Tina Heilesen[1], Doris Jensen[1], Dorte Melgaard[2,3]

1. Department of Obstetrics and Gynecology, North Denmark Regional Hospital, Hjoerring, Denmark
2. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Introduction
Lichen Sclerosus (LS) can affect sexuality and quality of life (QoL).

Objective
To evaluate the impact of psychosexual counseling in women with LS.

Methods
158 women + 18 years, newly diagnosed with LS, and referred to North Denmark Regional Hospital from January 2018 to November 2019 were included. The women were randomized in a 1:1 ratio to usual care or an intervention group receiving usual care and up till 8 individual consultations with a specialist in sexual counseling. Spouses or partners were encouraged to participate. The women filled out the questionnaires 'Female Sexual Function Index'(FSFI), 'Dermatology Life Quality Index' (DLQI), and the 'WHO-5 Well-Being Index' at baseline and after 6 months.

Results
The controls presented a mean score of 14.8 ± 8.7 and the intervention group a mean score of 12.8 ± 8.9 at FSFI. At follow-up the controls had a FSFI score of 15.2 ± 9.2 and the intervention group revealed a FSFI score of 18.3 ± 9.5. Both groups experienced improved sexual functioning, and for the intervention group the increase was significant ($p<0.001$).

At baseline the DLQI mean score was 8.9 ± 5.6 for the control group and 9.3 ± 6.1 for the intervention group. At follow-up the controls revealed a score of 8.6 ± 5.5 and the intervention group a score of 6.8 ± 5.8. The intervention group reached a significant higher degree of QoL than the controls (p=0.008).

Conclusion
Psychosexual counseling has a significant impact on sexual functioning and QoL in women with LS.

THE IMPACT OF PSYCHOSEXUAL COUNSELING ON QUALITY OF LIFE AND SEXUAL FUNCTIONING IN WOMEN WITH LICHEN SCLEROSUS

- randomized controlled trial

Gitte Vittrup, RN[1] • Signe Westmark, MSc[2] • Johannes Riis, MD[2] • Lisbeth Mørup, MD[1] • Tina Heilesen, RN[1] • Doris Jensen, RN[1] • Dorte Melgaard, PhD[2,3]

[1]Department of Gynecology, Pregnancy, and Children, North Denmark Regional Hospital, Hjoerring, Denmark • [2]Center for Clinical Research, North Denmark Regional Hospital, Denmark • [3]Department of Clinical Medicine, Aalborg University, Denmark

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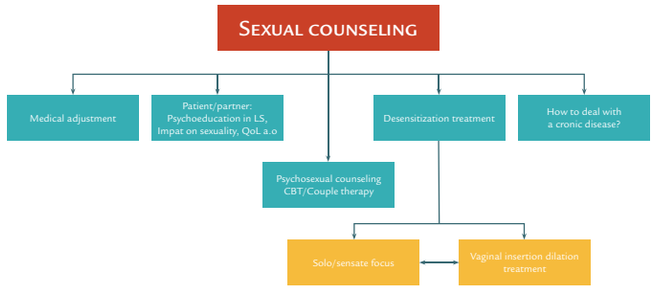
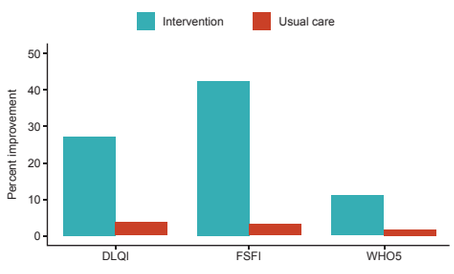
Psychosexual counseling has a significant impact on sexual functioning and QoL in women with LS.





NORTH DENMARK REGIONAL HOSPITAL

Contact: givi@rn.dk

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The quality of life and sexuality in women with Lichen Sclerosus – a cross sectional study

Gitte Vittrup1, Lisbeth Mørup[1], Tina Heilesen[1], Doris Jensen[1], Signe Westmark[2], Dorte Melgaard[2,3]

1. Department of Obstetrics and Gynecology, North Denmark Regional Hospital, Hjoerring, Denmark
2. Center for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
Lichen sclerosus (LS) affects the female anogenital area, causing anatomical changes. Reported symptoms include itching, soreness and dyspareunia.

Objective
This cross-sectional study intends to evaluate the quality of life and sexual functioning in women with LS.

Methods
158 women aged over 18, diagnosed with LS, and referred to North Denmark Regional Hospital from January 2018 to November 2019 were included. The questionnaires 'Female Sexual Function Index (FSFI)', 'Dermatology Life Quality Index (DLQI)', and the 'WHO-5 Well-Being Index' were completed.

Results
The women (mean age 47 years (18–76)) presented a low score on all FSFI scales, with a mean score of 13.83 (95% CI: 12.46;15.20), indicating reduced sexual functioning. The sub-group evaluation scored as follows: Desire 2.32; arousal 2.23; lubrication 2.39; orgasm 2.28; satisfaction 3.02; pain 1.59. The results from DLQI revealed a mean score of 7.88 (95% CI: 7.02;8.74), indicating a moderate effect on the women´s everyday life. The mean sub-scores were: Treatment 0.32; sexual difficulties 1.56; relations 1.02; work/study 0.34; sport 0.45; social activities 0.54; clothing 0.89; shopping 0.22; embarrassment 0.99 and itching, soreness and, pain 1.55. The mean score for the WHO-5 Well-Being Index was 56.66 (95% CI: 53.48;59.84) indicating that 40% of the women had signs of depression.

Conclusions
This study concludes that LS has a considerable influence on the sexual functioning and quality of life of women, indicating a need for sexual counseling. Health care professionals must not only consider the biological aspects but also the psychological and social aspects.

THE QUALITY OF LIFE AND SEXUALITY IN WOMEN WITH LICHEN SCLEROSUS

- a cross sectional study

Gitte Vittrup, RN[1] • Lisbeth Mørup, MD[1] • Tina Heilesen, RN[1] • Doris Jensen, RN[1] • Signe Westmark, MSc[2] • Dorte Melgaard, PhD[2,3]

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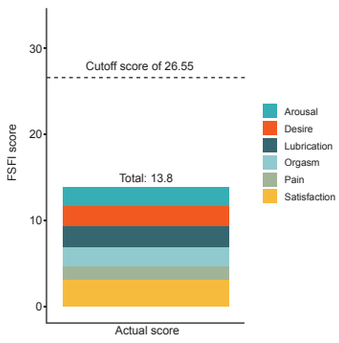
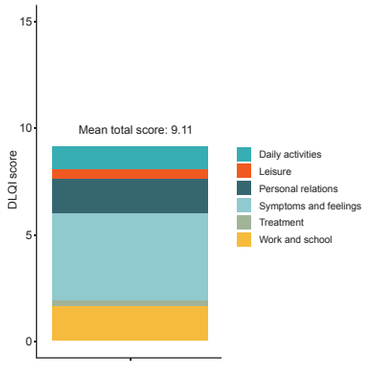


Effect on patients lifes according to DLQI:

0-1: no effect at all
2-5: small effect
5-10: moderate effect
11-20: very large effect
21-30: extremly large effect



NORTH DENMARK REGIONAL HOSPITAL

Contact: givi@rn.dk

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Validation of cervical lesion proportion measure using a gridded imaging technique to assess cervical pathology in women with genital schistosomiasis

Katrina Aaroe[1], Louise Thomsen Schmidt Arenholt[1], Kanutte Norderud[1], Mads Lumholdt[1], Bodo Randrianasolo[2], Dorthe Brønnum[1], Hermann Feldmeier[3], Peter Derek Christian Leutscher[1,4]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjørring
2. Association K'OLO VANONA, Antananarivo, Madagascar
3. Institute of Microbiology and Infectious Diseases Immunology, Campus Benjamin Franklin, Charité - University Medicine Berlin, Germany
4. Department of Clinical Research, Aalborg University, Aalborg

Background
Female genital schistosomiasis (FGS) is characterized by a pattern of lesions which manifest at the cervix and the vagina, such as homogeneous and grainy sandy patches, rubbery papules in addition to neovascularization. A tool for quantification of the lesions is needed to improve FGS research and control programs. Hitherto, no tools are available to quantify clinical pathology at the cervix in a standardized and reproducible manner. This study aimed to develop and validate a cervical lesion proportion (CLP) measure for quantification of cervical pathology in FGS.

Method
A digital imaging technique was applied in which a grid containing 424 identical squares was positioned on high resolution digital images from the cervix of 70 women with FGS. A CLP was made for each image by counting the total number of squares containing at least one type of pathognomonic lesions. For validation of inter- and intra-observer reliability, three different observers estimated CLP independently. In addition, a rubbery papule count (RPC) was determined in a similar manner.

Results
The intraclass correlation coefficient was 0.94 (excellent) for the CLP inter-rater reliability and 0.90 (good) for intra-rater reliability and the coefficients for the RPC were 0.88 and 0.80 (good), respectively.

Conclusion
The CLP facilitated a reliable and reproducible quantification of the surface of the cervix affected by FGS pathognomonic lesions. Grading of cervical pathology by CLP can provide insight into the natural course of schistosome egg-induced pathology of the cervix. Moreover, CLP provides a measure for the efficacy of treatment.

Validation of cervical lesion proportion measure using a gridded imaging technique to assess cervical pathology in women with genital schistosomiasis

Katrina Aaroe[1] • Louise Thomsen Schmidt Arenholt[1] • Kanutte Norderud[1] • Mads Lumholdt[1] • Bodo Randria-nasolo[2] • Dorthe Brønnum[1] • Hermann Feldmeier[3] • Peter Derek Christian Leutscher[1,4]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjørring, 2. Association K'OLO VANONA, Antananarivo, Madagascar. 3. Institute of Microbiology and Infectious Diseases Immunology, Campus Benjamin Franklin, Charité University Medicine Berlin, Germany. 4. Department of Clinical Research, Aalborg University, Aalborg.

Background

Schistosoma haematobium, a trematode worm, only occurs in Africa and in the Middle East. In women S. haematobium affects particularly the external and internal genital organs. This manifestation is knows as female genital schistosomiasis (FGS).[1] Millions of women suffer from FGS, which causes a spectrum of genital symptoms signs, including pain during sexual intercourse and post-coital bleeding.[2-4] Moreover, FGS may lead to infertility and ectopic pregnancy.[5,6] FGS is associated with a poor quality of sexual life and may cause stigmatization.[7,8] FGS is also associated with an increased risk of acquiring sexually transmitted pathogens, such as the human immunodeficiency virus (HIV) and the human papilloma virus (HPV).[9-11]

FGS is characterized by a pattern of lesions which manifest at the cervix and the vagina, such as homogeneous and grainy sandy patches, rubbery papules in addition to neovascularization.[12] A tool for quantification of the lesions is needed to improve FGS research and control programs. Hitherto, no tools are available to quantify clinical pathology at the cervix in a standardized and reproducible manner. This study aimed to develop and validate a cervical lesion proportion (CLP) measure for quantification of cervical pathology in FGS.

Method

A digital imaging technique was applied in which a grid containing 424 identical squares was positioned on high resolution digital images from the cervix of 70 women with FGS. A CLP was made for each image by counting the total number of squares containing at least one type of pathognomonic lesions. For validation of inter- and intra-observer reliability, three different observers (A,B and C) estimated CLP independently. In addition, a rubbery papule count (RPC) was determined in a similar manner.

Results

Age: Median age of the women was 26.5 years (interquartile range (IQR) 20.8-33.0).

Cervical lesion proportion

The CLP ranged from 0.5% to 59.4% in observer A, from 0% to 49.8% in observer B, and from 0.2% to 47.6% in observer C. Figure 1 shows mean CLP by the three observers for each the 60 digital images. Median CLP (interquartile range, IQR) for observers A, B and C was 10.1% (3.7-25.8), 8.4% (3.2-14.6) and 7.8% (5.2-19.5), respectively (Figure 2). The difference in scores was statistically significant between observers A and B (p=0.007) and observers A and C (p=0.007), but not between observers B and C (p=0.19). The intra-observer median CLP (IQR) was 6.3% (1.7-11.9) and 8.1% (3.4-14.0), thus not statistically significant (p=0.352). The mean proportions were divided into three interval levels defined arbitrarily as low (1 to 15%), intermediary (16 to 30%) and high (>30%) with a distribution as follows: 68% (n=41), 18% (n=11) and 13% (n=8). Three randomly selected cases representing each of the three levels are displayed in Figure 3.

Rubbery papule count

The RPC ranged from 0 to 18 in observer A, from 0 to 19 in observer B, and from 0 to 28 in observer C. Figure 2 shows the distribution of RPC for each the 60 digital images. Median RPC (IQR) for observer A, B and C was 1 (0-3), 2 (0-4) and 2 (0-4), respectively (Figure 4). Differences in median scores were statistically significant between observers A and B (p=0.041) and between observers A and C (p=0.024), but not between observers B and C (p=0.438). Median RPC (IQR) was 1 (0-3) in and 1 (0-2) thus statistically significant (p=0.002). The Fleiss kappa value for the three observers in distinguishing rubbery papules was 0.55 (IC 0.54-0.55; p<0001), demonstrating a moderate agreement.

Inter- and intra-observer reliability

The inter-observer reliability (A, B and C) for CLP measured by ICC was 0.93 (95% CI 0.90-0.96) indicating an excellent performance. The inter-observer reliability (A, B and C) for RPC measured by ICC was 0.88 (95% CI 0.82-0.92), indicating a good performance. The intra-observer reliability (A) for CLP measured by the intra-class correlation coefficient ICC was 0.90 (95% CI 0.79-0.95), indicating an excellent performance. The intra-observer reliability (C) for RPC measured by ICC was 0.80 (95% CI 0.59-0.90), indicating a good performance.

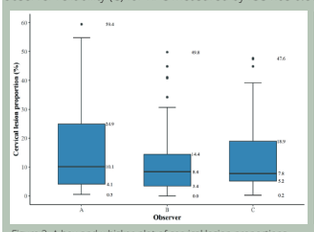


Figure 3: A box-and-whisker-plot of cervical lesion proportions (%) for each observer (A, B and C) rating the 60 digital images. The bold horizontal line indicates the median, the upper and the lower line of the box the interquartile range.

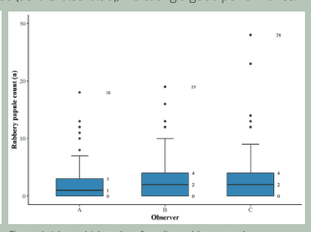


Figure 4: A box-whisker plot of median rubbery papule count (n) and interquartile range for each observer (A, B and C, respectively) rating the 60 digital images.

Conclusion

The CLP facilitated a reliable and reproducible quantification of the surface of the cervix affected by FGS pathognomonic lesions. Grading of cervical pathology by CLP can provide insight into the natural course of schistosome egg-induced pathology of the cervix. Moreover, CLP provides a measure for the efficacy of treatment.

The study was funded by Merck KGaA.

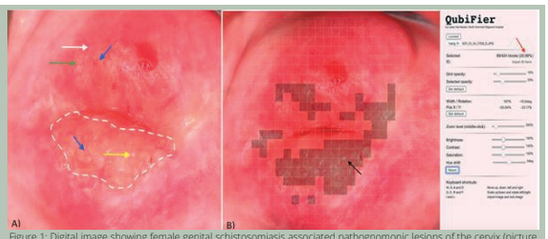
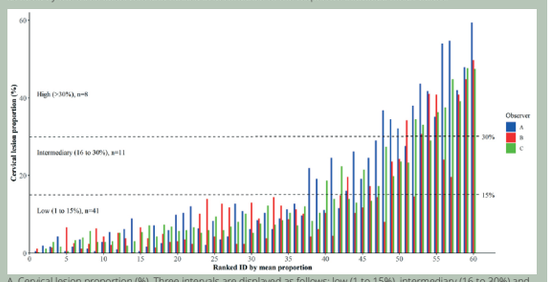
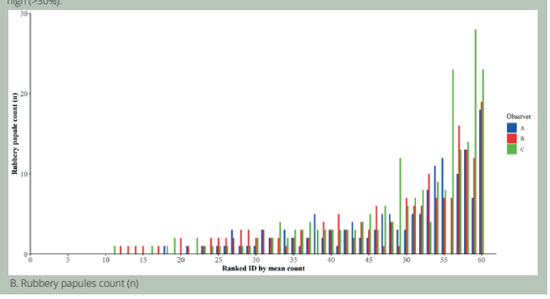


Figure 1: Digital image showing female genital schistosomiasis associated pathognomonic lesions of the cervix (picture A) and the same lesions being digitally marked by QubiFier to determine the cervical lesion pro-portion (picture B). The left picture (A) shows an area, which contains homogenous yellow sandy patches appearing as yellow colored area (indicated by white dashed line). The differently colored arrows indicate the other pathognomonic lesion types: a grainy sandy patch (white arrow), clustered grainy sandy patches or rice-grain shaped sandy patches (green arrow) and a rubbery papule colored in beige with an uneven surface (yellow arrow). Abnormal blood vessel (rounded, uneven-calibered, corkscrew or convoluted) are indicated by the blue arrow. The right picture (B) shows squares of the grid marked digitally containing any types of pathognomonic lesions. The red arrow shows the proportion of the cervix covered by any type of pathognomonic lesions.

Figure 2: Distribution of cervical lesion proportion (A) and rubbery papule counts (B) for of each the 60 digital images as rated by the three observers and ranked in accordance to the respective individual mean values.



A. Cervical lesion proportion (%). Three intervals are displayed as follows: low (1 to 15%), intermediary (16 to 30%) and high (>30%).



B. Rubbery papules count (n)

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Do women's experiences of childbirth change over time? – a six week follow up study in a Danish population

Kristine Lyngbye Jensen[1], Dorte Melgaard[2], Victoria Lindblad Nielsen[1], Anya Eidhammer[1], Kristian Hay Kragholm[2], Signe Westmark[2], Rikke Damkjær Maimburg[3]

1. Department of Women's related diseases, Pregnancy and Childbirth, North Denmark Regional Hospital, Hjørring
2. Centre for Clinical Research, North Denmark Regional Hospital, Hjørring
3. Department of Clinical Medicine – Department of Obstetrics and Gynecology, Aarhus

Background
Childbirth is a complex and important event in most women's lives and several factors may influence the childbirth experience. A spontaneous birth without interventions is associated with a positive birth experience. Conversely, a childbirth with obstetrical interventions is associated with a negative birth experience. However, childbirth is increasingly medicalized. Therefore, it is important to evaluate the women's perceptions regarding their experience.

Methods
This study was a six-week follow-up study using 'The Childbirth Experience Questionnaire' (CEQ) evaluating the childbirth experience at one and six-weeks postpartum. The data analysis was performed calculation the mean difference in the CEQ-scores between one week and follow-up. Further, an explorative multiple regression model was used to access the association between CEQ-scores at six-weeks postpartum and selected birth interventions.

Findings
At six-weeks postpartum the overall CEQ-score and the domains 'Participation' and 'Professional support' all showed a lower CEQ-score. The domain 'Own capacity' showed no change. Induction of labour, augmentation of labour, emergency cesarean section, epidural analgesia and nitrogen oxide were associated with a statistically significant lower CEQ-score and thereby a lower satisfaction with the childbirth experience.

Conclusion
Women's overall birth experience develops in a more negative direction postpartum as the childbirth experience is scored more negatively by more than half of the women six-weeks postpartum compared to the first week after birth. Interventions in the birth process influence the childbirth experience negatively. Giving birth with a known midwife and having a spontaneous vaginal birth are associated with a positive childbirth experience.

Do women's experiences of childbirth change over time?

A six week follow up study in a Danish population

Lyngbye Kristine[1] • Lindblad Victoria[1] • Eidhammer Anya[1] • Melgaard Dorte[2] • Westmark Signe[2] • Kragholm Kristian[2] • Maimburg Rikke[3]

[1]*Department of Women's related diseases, Pregnancy and Childbirth. North Denmark Regional Hospital, Hjoerring, Denmark*
[2]*Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark*
[3]*Department of Clinical Medicine – Department of Obstetrics and Gynecology, Aarhus N, Denmark*

Background and objective

Childbirth is a complex and important event in most women's lives and several factors may influence the childbirth experience.
A spontaneous birth without interventions is associated with a positive birth experience. Conversely, a childbirth with obstetrical interventions is associated with a negative birth experience. However, childbirth is increasingly medicalized.
Therefore, it is important to evaluate the women's perceptions regarding their experience.

Methods

This study was a six-week follow-up study using 'The Childbirth Experience Questionnaire' (CEQ) evaluating the childbirth experience at one and six-weeks postpartum. The data analysis was performed calculation the mean difference in the CEQ-scores between one week and six-weeks. We included parturient women who gave birth to one liveborn child from gestational age 37+0-41+6.

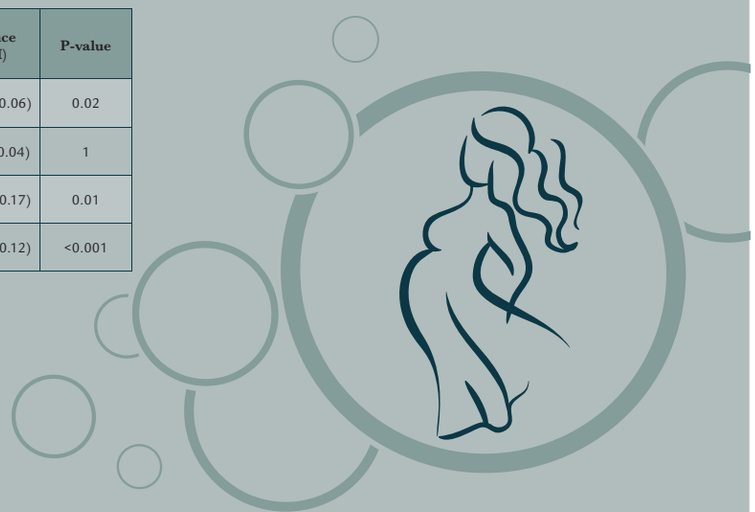
Results

- The study population included 184 women.
- The childbirth experience develops in a more negative direction six-weeks after birth compared to one week after birth (table 1)
- Interventions in the birth process, thereby induction of labour, argumentation of labour and emergency cesarean section were all associated with a lower CEQ-score
- Giving birth with a known midwife and having a spontaneous birth without interventions were associated with a higher CEQ-score.

Implications

- Shared decision making intrapartum
- Women-centred postpartum conversation
- Antenatal training sessions

N=184	1-week CEQ-score Mean (SD)	6 weeks CEQ-score Mean (SD)	Difference (95%CI)	P-value
Overall CEQ-score	3.34 (0.44)	3.31 (0.44)	0.03 (0.01;0.06)	0.02
Own capacity	3.08 (0.60)	3.08 (0.59)	0.0 (-0.04;0.04)	1
Participation	3.44 (0.67)	3.35 (0.70)	0.09 (0.02;0.17)	0.01
Professional support	3.86 (0.32)	3.77 (0.35)	0.08 (0.05;0.12)	<0.001



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Defekter i musculus levator ani hos primipara kvinder, der har født før eller efter implementering af "det finske håndgreb"

Lin Henriksen[1,2], Constanze Merkel[3], Louise Thomsen Schmidt Arenholt[1,2,3]

1. Center for Klinisk Forskning, Regionshospital Nordjylland, Danmark
2. Klinisk Institut, Aalborg Universitet, Danmark
3. Gynækologisk og Obstetrisk Afdeling, Regionshospital Nordjylland, Danmark

Baggrund
I 2013 indførtes "Det finske håndgreb" på Regionshospital Nordjylland. Metoden anvendes i fødslens sidste fase, og indebærer at perineum støttes og barnets hoved holdes tilbage således hastigheden af hovedets fødsel nedsættes. Ved dette håndgreb mindskes risikoen for grad 3 og 4 rupturer af muskulus sphicter ani og man så da også at risikoen faldt (fra 7,2% i 2012 og til 2,9% i 2013). Imidlertid er det muligt, at håndgrebet medfører en større påvirkning af en anden vigtig muskel i bækkenbunden - musculus levator ani. Ved ruptur og/eller denervering/devaskularisering af denne muskel øges risikoen for senere urin-inkontinens og vaginalprolaps samt dårligere outcome ved operation for disse lidelser. Formålet med studiet er således at evaluere på tilstedeværelse af levator ani defekter visualiseret ved hjælp af 3D ultralyd, hos primipara kvinder, som har født hhv. før og efter implementering af "Det finske håndgreb".

Metoder
Der planlægges at inkludere 300 primipara kvinder, med fødselstidspunkt mellem 2008-2018. Kvinderne identificeres via udtræk fra fødselsdatabasen og inviteres til deltagelse via e-boks.

Alle kvinder får foretaget en gynækologisk undersøgelse hvor grad af eventuel vaginalprolaps vurderes ved hjælp af en POP-Q måling. Ligeledes foretages en endovaginal 3D ultralydsscanningen af bækkenbunden. Defekter i levator ani graderes som "normal", "mild" eller "svær" afhængig af størrelsen af defekten samt om skaden er ensidig eller dobbeltsidig. Slutteligt besvares tre udvalgte spørgeskemaer (ICIQ-VS, ICIQ-UI-SF og St. Marks Score) omhandlende urogenitale problemstillinger.

Resultater
2518 primipara kvinder er identificeret. Ved indsendelse af abstrakt er over 100 kvinder inkluderet og resultater vil foreligge ved symposiet.

Konklusion
Afventes.

Defekter i *musculus levator ani* hos primipara kvinder, der har født før eller efter implementering af "Det Finske Håndgreb"

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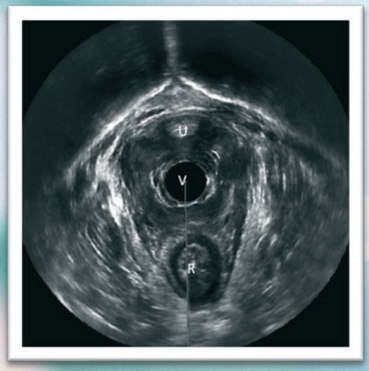
I forbindelse med gynækologisk undersøgelse blev der udført en POP-Q måling af vagina, som anvendes til gradering af vaginalprolaps. Ligeledes fik alle foretaget en endovaginal 3D ultralydsscanningen af bækkenbunden. Defekter i levator ani blev graderet som "normal", "mild" eller "svær" afhængig af størrelsen af defekten samt om skaden var ensidig eller dobbeltsidig. Slutteligt besvarede deltagerne 3 udvalgte spørgeskemaer (ICIQ-VS, ICIQ-UI-SF og St. Marks Score) omhandlende urogenitale problemstillinger.

Resultater:

2518 primipara kvinder blev inviteret. Endelige resultater af studiet foreligger endnu ikke.

Konklusion:

Afventes



Endovaginal 3D ultralydsscanningen af bækkenbundensmuskulaturen.
U = urinrør, V = vagina, R = rectum.

[1]: Center for Klinisk Forskning, Regionshospital Nordjylland, Danmark
[2]: Klinisk Institut, Aalborg Universitet, Danmark
[3]: Gynækologisk og Obstetrisk Afdeling, Regionshospital Nordjylland, Danmark

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Prevalence of urogynecological symptoms among primiparous women before and after manual perineum support: a cohort-based follow-up questionnaire study

Louise Thomsen Schmidt Arenholt[1,2,3], Kathrine Højbjerg[1,2]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjørring
2. Department of Clinical Medicine, Aalborg University, Aalborg
3. Department of Obstetrics and Gynecology, North Denmark Regional Hospital, Hjørring

Background
Since 2013 special attention has been put on supporting the perineum and holding back the caput during the last stage of labor, aiming to reduce sphincter defects. By holding back the caput, the time, in which the levator ani muscle (LAM) is stretched to the maximum, is prolonged. This could increase the risk of LAM defects leading to higher risk of pelvic organ prolapse (POP) and urinary incontinence (UI). The aim of this study is to evaluate symptoms of POP and UI in primiparous women giving birth before and after 2013.

Methods
Singleton primiparous women giving birth at North Denmark Regional Hospital 2008-2018 were identified (2518). Two online questionnaires (ICIQ-VS and ICIQ-UI-SF) were send. The women were grouped – cohort [A] 2008-2012 and [B] 2013-2018.

Results
In all, 115 in [A] and 201 in [B] returned the questionnaires. There was a significant difference in age and BMI, with the women in [A] being older (37 vs 30 years, $p<0.001$) and heavier (BMI 27.4 vs 25.0, $p=0.002$). Regarding sphincter rupture grade 3/4, we found no significant difference between the two cohorts.

There were no significant differences in number of women with POP-symptoms ([A] 44.1% and [B] 39.8%) but a significant difference when evaluating UI-symptoms ([A] 37.8% and [B] 20.2%, $p=0.001$).

Conclusions
We found significantly fewer women with UI-symptoms in the cohort who gave birth after 2013 and no difference in POP-symptoms. This could indicate no higher risk of LAM defects after 2013, but could also be due to this cohort being younger and with lower BMI. To evaluate the risk of LAM defects after 2013, ultrasound must be used.

PREVALENCE OF UROGYNECOLOGICAL SYMPTOMS AMONG PRIMIPAROUS WOMEN BEFORE AND AFTER MANUAL PERINEUM SUPPORT: A COHORT-BASED FOLLOW-UP QUESTIONNAIRE STUDY

LOUISE THOMSEN SCHMIDT ARENHOLT 1,2,3, KATHRINE HØJBJERG 1,2

1: CENTRE FOR CLINICAL RESEARCH, NORTH DENMARK REGIONAL HOSPITAL, 2: DEPARTMENT OF CLINICAL MEDICINE, AALBORG UNIVERSITY, 3: DEPARTMENT OF OBSTETRICS AND GYNECOLOGY, NORTH DENMARK REGIONAL HOSPITAL

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Questionnaire	Early cohort	Late cohort	*p*-value
ICIQ-VS VSS, n/N (%)	**49/111 (44.1)**	**78/196 (39.8)**	**NS**
No tears	18/43 (41.9)	26/68 (38.2)	NS
1st and 2nd	18/36 (50.0)	33/86 (38.4) [D]	NS
3rd and 4th	4/11 (36.4)	9/13 (69.2) [F]	NS
Cesarean section	9/21 (42.9)	10/29 (34.5)	NS
ICIQ-VS SMS, n/N (%)	**5/67 (7.5)**	**16/131 (12.2)**	**NS**
No tears	3/28 (10.7)	7/44 (15.9)	NS
1st and 2nd	1/21 (4.8)	6/57 (10.5)	NS
3rd and 4th	0/7 (0.0)	3/9 (33.3) [F]	NS
Cesarean section	1/11 (9.1)	0/21 (0.0)	NS
ICIQ-UI SF, n/N (%)	**42/111 (37.8)**	**40/198 (20.2)**	**0.001**
No tears	17/43 (39.5) [C]	19/68 (27.9) [C]	NS
1st and 2nd	17/36 (47.2) [E]	16/87 (18.4)	0.001
3rd and 4th	5/11 (45.5)	3/13 (23.1)	NS
Cesarean section	3/21 (14.3)	2/30 (6.7)	NS

The table shows the number of women with clinically relevant symptoms and the total number of women who have answered the questionnaires in each birth group of both cohorts. The clinically relevant symptoms were defined from the questionnaires ICIQ-VS VSS, ICIQ-VS SMS and ICIQ-UI SF with regard of frequency of symptoms. The percentages and p-values are also stated. Chi-squared test and Fisher's exact test were used.

Results: In all, 115 in [A] and 201 in [B] returned the questionnaires. There was a significant difference in age and BMI, with the women in [A] being older (37 vs 30 years, p<0.001) and heavier (BMI 27.4 vs 25.0, p=0.002). Regarding sphincter rupture grade 3/4, we found no significant difference between the two cohorts.

There were no significant differences in number of women with POP-symptoms ([A] 44.1% and [B] 39.8%) but a significant difference when evaluating UI-symptoms ([A] 37.8% and [B] 20.2%, p=0.001).

Conclusions: We found significantly fewer women with UI-symptoms in the cohort who gave birth after 2013 and no difference in POP-symptoms. This could indicate no higher risk of LAM defects after 2013, but could also be due to this cohort being younger and with lower BMI. To evaluat LAM defects in the two cohorts , ultrasound must be used.

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The urinary, vaginal and gut microbiota in women with genital lichen sclerosus: a case-control study

Sofie Nygaard and Katrine Gerlif[1,2], Louise Thomsen Schmidt Arenholt[1,2,5], Caspar Bundgaard-Nielsen[1,2], Annemarie Brusen Villadsen[1,2], Ann-Maria Jensen[1], Suzette Sørensen[1,2,3], Peter Leutscher[1,2,3], Jean Media[4]

1. Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Steno Diabetes Center North Denmark, Aalborg, Denmark
4. Department of Obstetrics and Gynecology, Aalborg University Hospital, Aalborg, Denmark
5. Department of Obstetrics and Gynecology, North Denmark Regional Hospital, Hjoerring, Denmark

Background
Lichen sclerosus (LS) is a chronic, autoimmune skin disease predominantly located in the anogenital region in women. In recent years, the role of the human microbiota in the pathogenesis of autoimmune diseases, including LS, has received interest.

Objectives
The study aimed to evaluate and compare the composition of the urinary, vaginal and gut microbiota in women with LS versus non-affected controls.

Methods
Women diagnosed with LS (n=16) and matched controls (n=14) were enrolled in the study. From each participant, midstream urine, upper and lower vaginal swabs as well as faecal samples were collected. The microbiota composition was assessed using 16S ribosomal RNA (rRNA) gene sequencing of the V4 hypervariable region.

Results
We observed no LS-specific clustering in either of the four anatomic niches, using either hierarchical cluster analysis or weighted beta diversity metrics. However, for unweighted UniFrac, significant differences in the urinary and lower vaginal microbiota were observed when comparing women with LS to controls. These findings indicate that while the two groups have microbiota dominated by the same bacteria, variations do occur amongst less abundant bacteria. The LEfSe analysis revealed a higher abundance of the genus Streptococcus in the urinary and lower vaginal microbiota in women with LS compared to controls. Additionally, the phylum Euryarchaeota was more abundant in the gut microbiota in women with LS compared to controls.

Conclusions
The findings in this study suggest that alterations in the urinary, vaginal and gut microbiota compositions may be involved in the aetiopathogenesis of genital LS. However, further research is required to assess whether these microbiota alterations are causative or merely a result of the underlying LS disease.

The urinary, vaginal and gut microbiota in women with genital lichen sclerosus: a case-control study

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[a]Centre for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark, [b]Department of Clinical Medicine, Aalborg University, Aalborg, Denmark, [c]Department of Obstetrics and Gynecology, Aalborg University Hospital, Aalborg, Denmark, [d]Steno Diabetes Centre North Jutland, Aalborg, Denmark. [e]Department of Obstetrics and Gynecology, North Denmark Regional Hospital, Hjoerring, Denmark

Introduction

Lichen Sclerosus (LS) is a chronic, autoimmune skin disease predominantly found in the anogenital region in women[1]. The relation between autoimmune diseases and microbiota has mainly been adressed in relation to the gut microbiota[2]. Since knowledge of the microbiota in relation to LS is sparse, the pressent study aimed at comparing the urinary, vaginal and gut microbiota in women with LS and non-affected women.

Method

The aim of this present case-control study was to include 20 women with confirmed LS and compare them to 20 healthy, age-matched controls. Inclusion criteria included objective signs and symptoms of LS. Pregnancy, age below 18, signs of other bladder, vagina or uterus infection, suspection of relevant dysplasia/cancer or treatment with antibiotics were criterias for exclusion.

Midstream urine, vaginal (upper and lower) and faecal samples were collected and extracted for total bacterial DNA. All analyses were performed by 16S rRNA gene sequencing.

Results

Overall, 16 women with LS (mean age 46.6 years ± 14.6) and 14 non-affected women (mean age 41.6 years ± 12.3) (p = 0.33) were included. No LS specific clustering was observed using either hierarchical cluster analysis or weighted beta diversity metrics. For unweighted UniFrac however, significant differences were observed for urine and lower vagina. The findings indicate that while the two groups have microbiota dominated by the same bacteria, variations do occur amongst less abundant bacteria. LEfSe analysis revealed several differences between the three microbiota niches in the women with Ls and non-affected women. In the urinary and lower vaginal microbiota, but not upper vaginal, the genus *Streptococcus* was found to be relatively more abundant in women with LS compared to non-affected women. Additionally, the phylum Euryarchaeota was relatively morea bundant in the gut microbiota in women with LS compared to non-affected women.

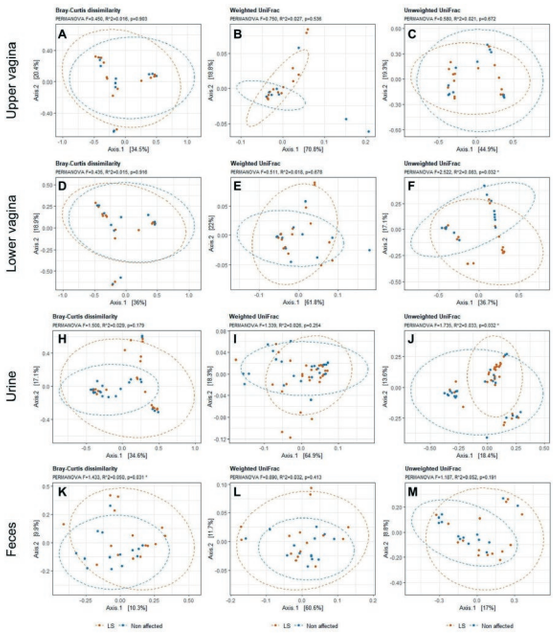

Figure 1

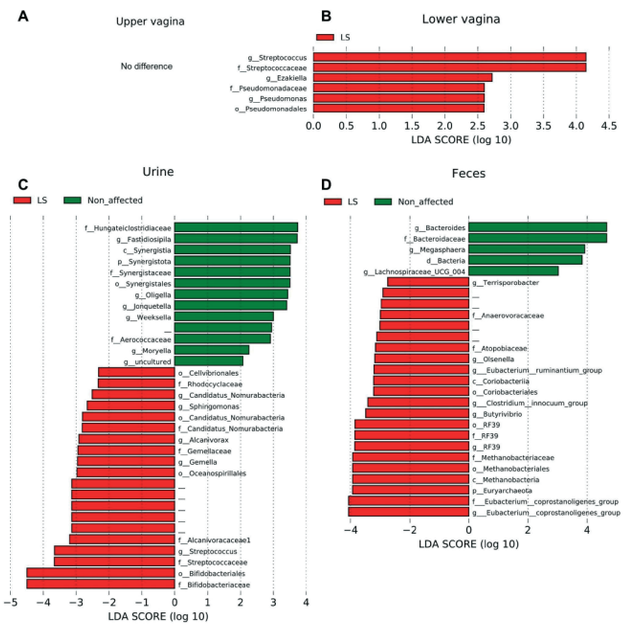

Figure 2

Figure 1: Beta diversity of women with LS and non-affected women presented using Principal Coordinate Analysis, with either PCoAof Bray-Curtis dissimilarities (A, D, H and K), weighted UniFrac(B, E, I and L) or unweighted UniFrac(C, F, J and M). Microbiota originated from the upper vagina (A, B and C), lower vagina (D, E and F), urine (H, I and J) and faeces (K, Land M) were compared between women with LS and non-affected women, respectively. Ellipses depict 95 confidence intervals. PERMANOVA results are indicated with adjusted p values and represent overall differences in beta diversity.

Figure 2: LEfSeanalysis, depicting differences in the microbiota composition between the women with LS and the non-affected women (LDA score >2.0, p<0.05). The results are presented using a-d) barplots, representing the LDA score of each genus. Microbiota originated from the upper vagina (A), lower vagina (B), urine (C) and faeces (D) were compared betweenwomen with LS and non-affected women, respectively.

Conclusion

We demonstrated several variations among less abundant bacteria in the lower vaginal, urinary and faecal microbiota when comparing women with LS to non-affected women. These results suggest that alterations in the microbiota could be involved in the pathophysiology of genital LS. However, additional research is required to fully clarify such an association.

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Primiparas differ from multiparas after early discharge regarding breastfeeding, anxiety, and insecurity - a prospective cohort study

Victoria Lindblad[1], Ditte Gommesen[2], Dorte Melgaard[3,4], Kristian Hay[3], Anya Eidhammer[1], Kristine Lyngbye Jensen[1]

1. Department of Gynecology, Pregnancy and Birth, North Denmark Regional Hospital, Hjørring
2. University of Southern Denmark, Odense
3. Center for Clinical Research, North Denmark Regional Hospital, Hjørring
4. Department of Clinical Medicine, Aalborg University, Aalborg

Introduction
Studies have shown that it is not uncommon among mothers to be discharged within 24 hours after birth. However, there is a lack of studies examining the effect of parity after early discharge. Therefore, this study examined characteristics and time for discharge of mothers discharged within 24 hours and the prevalence of mothers breastfeeding or feeling anxious or depressed one and six weeks after birth. Further, this study examined the prevalence of mothers having doubts about infant feeding, perceiving the length of hospital stay to be too short, how much knowledge the mothers perceive to have about the newborn's well-being, contacting the maternity ward and neonatal readmissions after discharge. Finally, this study examined the association between primiparas and multiparas according to the questions mentioned above.

Methods
This study was a prospective cohort study. Data were obtained from questionnaires and combined with registered data. All included mothers were healthy, with an uncomplicated birth and a healthy newborn, discharged within 24 hours after birth.

Results
A total of 147 mothers were included. This study found that primiparas had a higher risk of having doubts about infant feeding than multiparas, and more primiparas reported adverse outcomes than multiparas. Furthermore, primiparas were discharged later than multiparas throughout the first 24 hours after birth. Finally, none of the mothers discharged between seven to 24 hours perceived the time before discharge to be too short.

Conclusion
This study indicates that primiparas differ from multiparas after early discharge. Further studies are needed to optimize the quality of postpartum care.

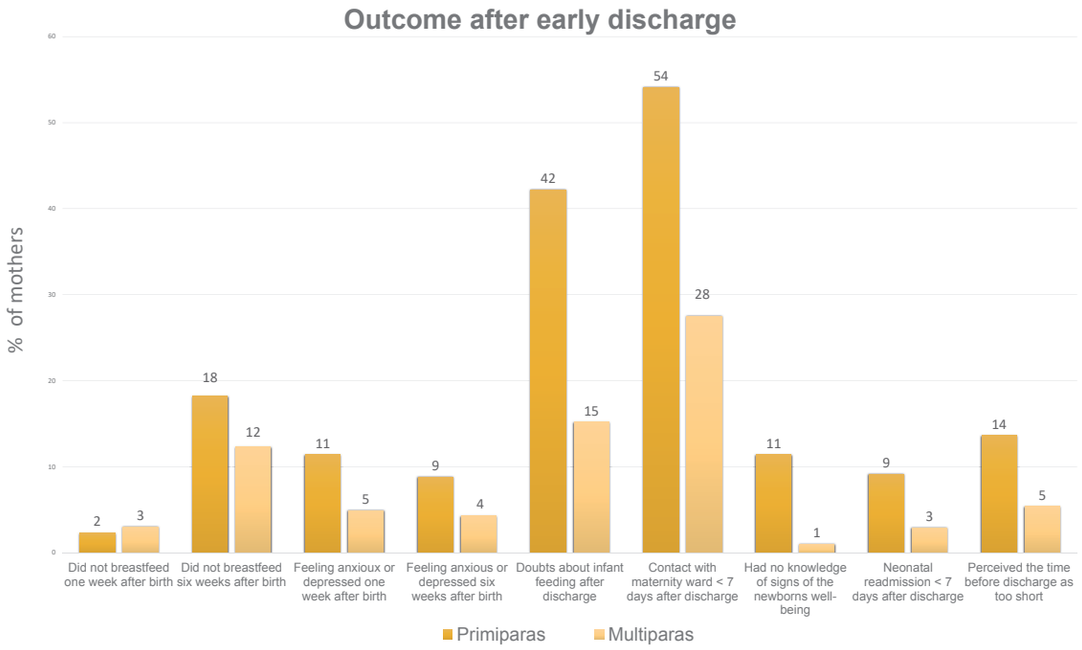
Does primiparas differ from multiparas after early discharge?

regarding breastfeeding, anxiety, and insecurity

- A prospective cohort study

Victoria Lindblad[1], Ditte Gommesen[2], Kristine Lyngbye Jensen[1], Anya Eidhammer[1], Signe Westmark[3], Kristian Hay Kragholm[3], Dorte Melgaard[3,4]

[1]Department of Gynecology, Pregnancy and Birth, North Denmark Regional Hospital, Hjoerring, Denmark, [2] University of Southern Denmark, Odense, Denmark, [3]Center for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark, [4]Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

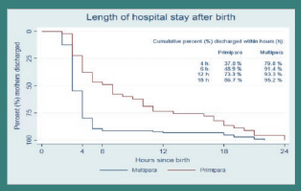


Background

- Former studies shows that up to 28% of primiparas and up to 84% of multiparas were discharged within 24 hours after birth.
- However, few other studies has examined the effect of parity after early discharge.
- This study examined, if there was a difference between primiparas and multiparas after early discharge.

Methods

- This study was designed as a prospective cohort study.
- Data was obtained from questionnaires combined with registered data.
- In the department of pregnancy and birth, the standard procedure was to discharge all healthy mothers, with an uncomplicated birth, and a healthy newborn, four hours after birth.



Results

- A total of 147 mothers participated.
- The study found that primiparas had a higher risk of having doubts about infant feeding and more primiparas reported adverse outcomes than multiparas.
- Primiparas was discharged later than multiparas throughout the first 24 hours.
- Finally, none of the mothers who were discharged between seven to 24 hours reported the time before discharge too short.

Conclusion: Primiparas DIFFER from multiparas after early discharge regarding doubts about infant feeding and time for discharge

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Early discharge of first-time parents and their newborn - a scoping review

Victoria Lindblad[1], Pernille Skou Gaardsted[2], Dorte Melgaard[3,4]

1. Department of Obstetrics and Gynecology, North Denmark Regional Hospital, Hjoerring, Denmark
2. Medical Library, Aalborg University Hospital, Aalborg, Denmark
3. Center for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark
4. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
This scoping review aims to identify the evidence of the outcomes of early discharge and the factors influencing the outcomes of early discharge of healthy first-time mothers and healthy newborns.

Methods
This scoping review follows the methodology described by Levac et al. Systematic searches were conducted using four databases up to February 2021, and a search for grey literature was performed. A total of 2030 articles were identified by the researchers V.L., D.M., and P.S.G. and reduced to 13 articles, and one article was added through chain search in reference lists. The aims of the identified studies, the methodology, participants, inclusion and exclusion criteria, and the setting, context, and findings were summarised.

Results
A total of 14 studies were included. A thematic analysis identified the following factors influencing the outcomes of discharge within 24 hours after birth: parental education in pregnancy, perinatal information before discharge, sources of support and follow-up strategies after discharge. Also, the analysis identified three outcomes such as breastfeeding, parents' experience and readmission of the newborn that may be influenced when first-time parents are discharged within 24 hours after birth. Findings in this review highlight the importance of identifying factors and outcomes related to early discharge. However, because of the heterogeneity in methodology, terminology and assessment procedures used in the retrieved articles the generalisation of study results is limited.

Conclusions
A gap in the literature about the outcomes of discharge within 24 hours after birth has been identified.

Future studies with strong evidence are needed, defining criteria, context, and intervention.

Early discharge of first-time parents and their newborn

- A scoping review

Victoria Lindblad[1], Pernille Skou Gaardsted[2], Dorte Melgaard[3,4]

[1]Department of Gynecology, Pregnancy and Birth, North Denmark Regional Hospital, Hjoerring, Denmark, [2]Medical Library, Aalborg University Hospital, Aalborg, Denmark, [3]Center for Clinical Research, North Denmark Regional Hospital, Hjoerring, Denmark, [4]Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

This scoping review identified

Factors that influence the **outcomes** after **early discharge**

- ✓ Parental education in pregnancy
- ✓ Perinatal information before discharge
- ✓ Social support
- ✓ Follow-up strategies after discharge

Outcomes after **early discharge**

- ✓ Breast feeding
- ✓ The parents sense of security
- ✓The parents satisfaction
- ✓ Readmission of the newborn

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EUROPEAN JOURNAL OF MIDWIFERY

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Reference

Lindblad V, Gaardsted PS, Melgaard D. Early discharge of first-time parents and their newborn – A scoping review. *Eur J Midwifery.* 2021;

Diverse

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Forekomst af øresten hos borgere med svimmelhed henvist til kommunal træning - et tværsnitsstudie

Christine Kjeldal Skram[1,2], Anne Carlsen[2], Dan Dupont Hougaard[1], Dorte Melgaard[3,4]

1. Øre-, Næse-, Halskirurgisk og Audiologisk Afdeling, Aalborg Universitetshospital, Aalborg
2. Træningsenheden Vest, Aalborg Kommune, Aalborg
3. Center for Klinisk Forskning, Regionshospital Nordjylland, Hjørring
4. Klinisk Institut, Aalborg Universitet, Aalborg

Baggrund
Benign paroxysmal positional vertigo (BPPV) er den hyppigste årsag til vestibulær vertigo og er karakteriseret ved kortvarige episoder med rotatorisk svimmelhed, fremkaldt ved ændringer i patientens hovedstilling. Dix-Hallpike Test og Supine Roll Test kan anvendes som objektive undersøgelser til diagnosticering af BPPV.

Formål
At undersøge forekomsten af BPPV blandt patienter med svimmelhed og balanceproblemer, som er henvist til kommunal genoptræning.

Metode
I perioden fra januar 2022 og juni 2022 inkluderes 150 patienter, der er henvist til genoptræning i Aalborg Kommune. Patienterne screenes via et spørgeskema for svimmelheds- og balanceproblematikker. Patienter der er positive i screeningen inkluderes i studiet og testes for BPPV af to specialeuddannede fysioterapeuter.

Resultater
Der foreligger endnu ingen data.

Perspektivering
Håbet er at studiet kan være med til at øge fokus på screening af BPPV hos patienter, som er henvist med svimmelhed- og balanceproblematikker til træning i Aalborg Kommune. Den indsamlede viden skal danne baggrund for at igangsætte ny praksis på området i forhold til undersøgelse og evt. behandling af BPPV på leje.

Forekomst af øresten hos borgere med svimmelhed henvist til kommunal træning - et tværsnitsstudie

Christine Kjeldal Skram [1,2], Anne Carlsen [2], Dan Dupont Hougaard [1], Dorte Melgaard [3]

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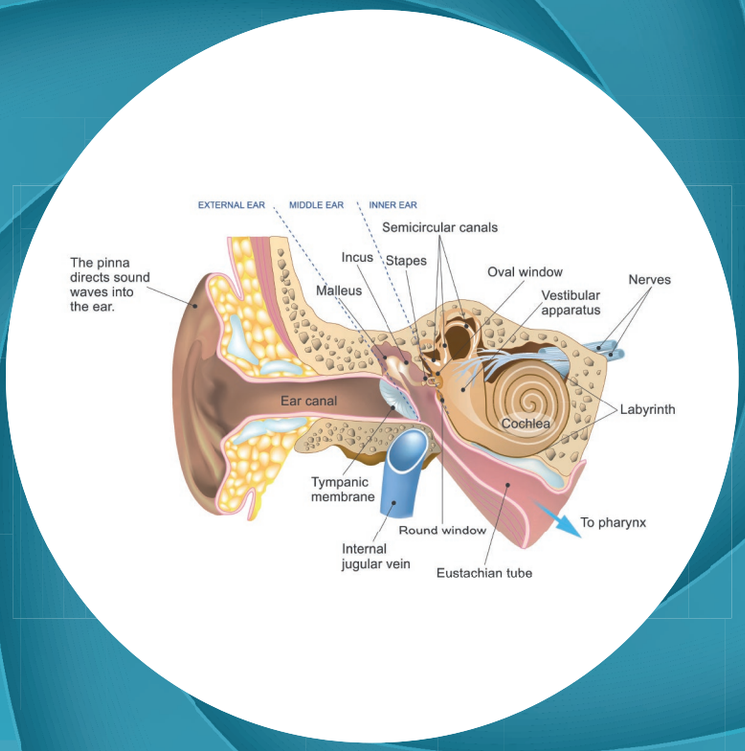

Aalborg Kommune

REGIONSHOSPITAL NORDJYLLAND – i gode hænder

AALBORG UNIVERSITETSHOSPITAL – i gode hænder

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How does AMPS-testing contribute to uncover the need for assistance after discharge in psychiatric patients? – a qualitative study

Louise Iris Mønsted Stubberup[1], Dorte Melgaard[2,3]

1. Department of Psychiatry, Aalborg University Hospital, Aalborg, Denmark
2. Centre for Clinical Research North Denmark Regional Hospital, Hjoerring, Denmark
3. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

Background
Patients admitted with psychiatric illnesses often experience occupational difficulties related to everyday activities (ADL). When discharged it is essential to determine their need for assistance. Assessment of Motor and Process Skills (AMPS) is an evidence-based assessment tool used in the investigation of patients' ADL-ability and determining the need for assistance. The aim of this study is to uncover the meaningfulness of AMPS in the assessment of need for assistance, with psychiatric patients.

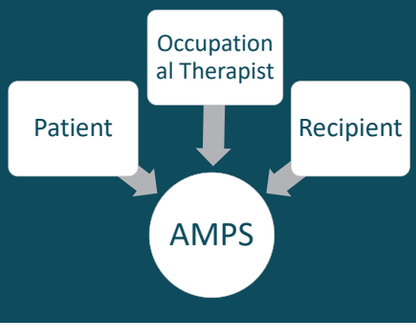
Methods
A qualitative interview study of the perspective of the patient, the Occupational Therapist (OT) and the recipient of AMPS results. Three participants from each group are interviewed. Participants are found within the Department of Psychiatry at Aalborg University Hospital. Interviews with OTs and recipients are conducted as focus group interviews and with patients as individual interviews. Interviews will take place from January to June 2022. Following this, an inductive analysis via a thematic content analysis will be conducted to illuminate important areas of consideration, when determining whether to use AMPS.

Results
Results will be available, autumn 2022.

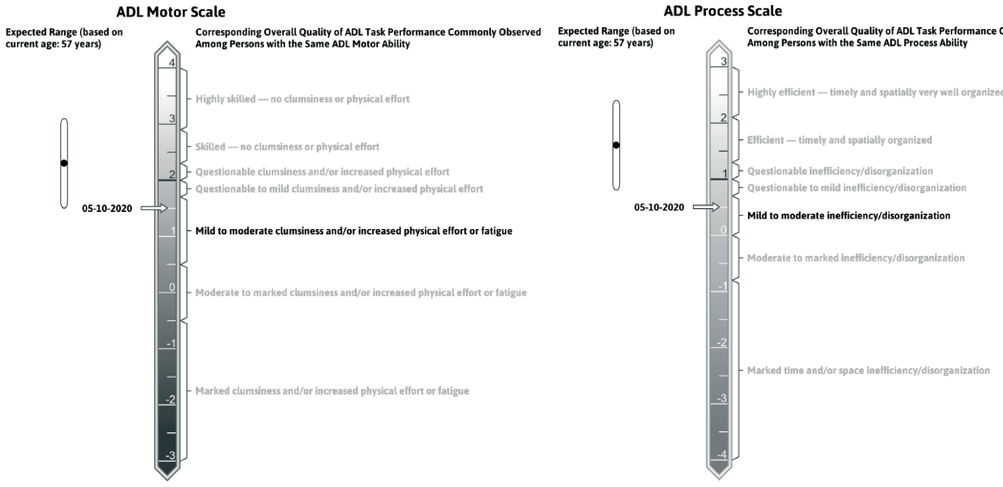
Perspective
Evaluating the meaningfulness of AMPS will contribute to optimizing the assessment of ADL in patients in a psychiatric hospital. Moreover, there is an economic perspective, as the application of resources can be justified by the use of best clinical practice and evidence available.

Improving Clinical Practice

How does AMPS-testing contribute to uncover the need for assistance after discharge in psychiatric Patients?



Louise Iris Mønsted Stubberup[1], Dorte Melgaard[2]
1. Department of Psychiatry, louise.stubberup@rn.dk, Aalborg University Hospital, Aalborg, Denmark.
2. Department of Clinical Medicine and Centre for Clinical Research, Aalborg University and North Denmark Regional Hospital, Hjoerring, Denmark



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PSYKIATRIEN – i gode hænder

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A Bibliometric Analysis of Publications from 2011 to 2020 from the North Denmark Regional Hospital

Pernille Skou Gaardsted[1], Maria Pertou Østergaard[1]

1. Medical Library, Aalborg University Hospital, Aalborg, Denmark

Background
Research is considered essential for the development of specialist knowledge and quality of the services of the North Denmark Regional Hospital. The focus on research has increased during the past years, and this bibliometric analysis will examine how the research output has developed from 2011 to 2020.

Methods
A search was run in the Scopus bibliographic database for publications affiliated to the North Denmark Regional Hospital limited to year 2011-2020. The search result was then exported to SciVal, a web-based analytics solution developed to evaluate research activities.

Additionally, the Scopus search result was exported to VOSviewer, a software tool for constructing and visualising bibliometric networks in order to see different bibliometric maps.

Results
298 publications were affiliated to the North Denmark Regional Hospital from 2011 to 2020 in the Scopus database. The number has increased steadily during the period. The research was published in a diverse range of journals and there was a general increase in the number of publications published in top 25 % journals based on CiteScore. More than 50 % of the publications were published in top 25 % Journals.

The field-weighted citation impact of the publications was 1,58 which indicates that the publications has been cited 58% more than the global average.

Conclusion
The increased number of publications and the improved citation impact over the past decade indicates that the focus on research has had a positive effect on the research output.

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Pernille Skou Gaardsted and Maria Pertou Østergaard
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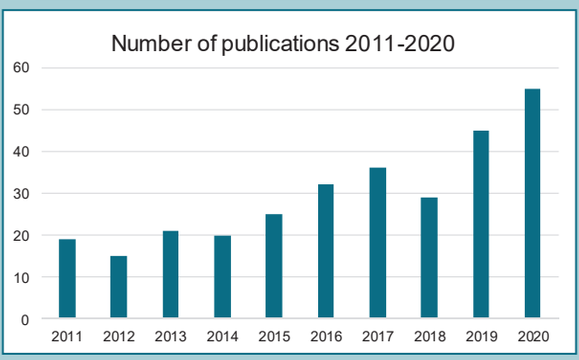
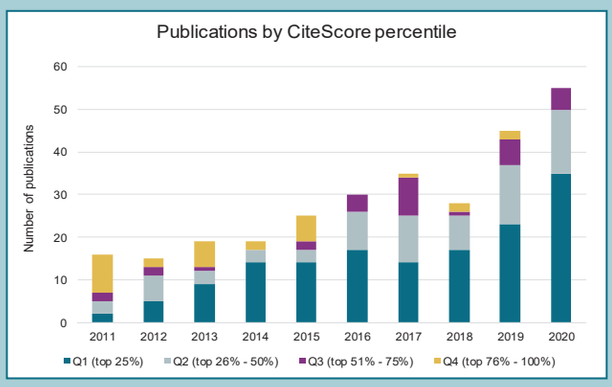
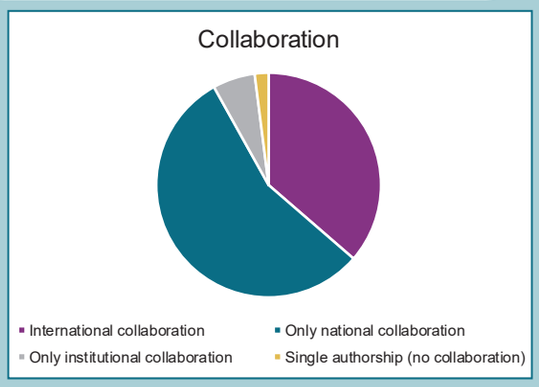
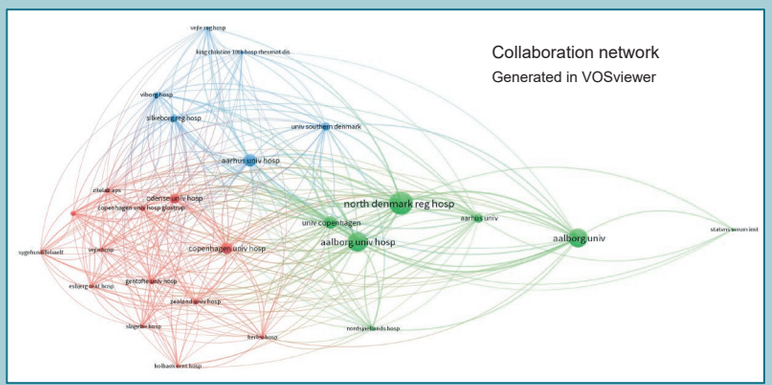


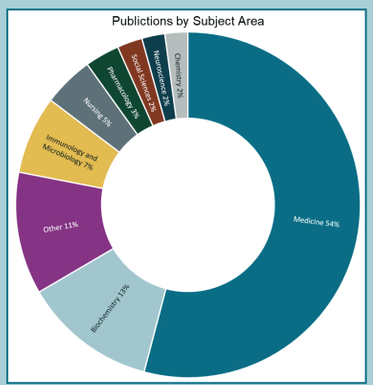
Results

- 298 publications from 2011-2020 in Scopus
- The research was published in a diverse range of journals
- 29 publications published in "Ugeskrift for Læger"
- 15.6 Citations per Publication on average
- Field-weighted citation impact 1.58 which indicates that the publications has been cited 58% more than the global average
- Citescore: more than 50 % of the publications were published in top 25 % journals









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Stereochemical profiling of amphetamine: A new clinical application to test compliance of patients with ADHD by urine analysis

Torben Breindahl[1], Brian S. Jensen[1], Kirsten Andreasen[1], Peter Hindersson[1]

1. Department of Clinical Biochemistry, North Denmark Regional Hospital, Hjørring

Background
The medical use of amphetamine-based drug to treat patients with attention deficit hyperactivity disorder (ADHD) has increased. Thus, patients with ADHD may be tested 'positive' in conventional drug-of-abuse analysis. However, it is possible to distinguish the use of 'illicit' amphetamine from use of legal drugs prescribed to these patients. Amphetamine-based drugs contain dextroamphetamine with only minor impurities of levoamphetamine, whereas amphetamine from an 'illicit' source is a mixture of dextroamphetamine and levoamphetamine (1:1). Therefore, compliance testing for patients with ADHD can be performed by urine analysis.

Methods
Stereochemical profiles of amphetamine were analyzed using ultra-high performance liquid chromatography with tandem mass spectrometry (UHPLC-MS/MS). Separation of D- and L-amphetamine was performed using chiral chromatography. The L/D ratio is used to distinguish samples from compliant patients (L/D < 0.2) with samples 'indicating use of amphetamine from illegal source' (L/D ≥ 0.2). Only samples with a requisition for assessment of ADHD medicine compliance are forwarded to stereochemical profiling.

Results
In data from 54 patient samples, 80 % (*n*=43) showed evidence for compliance, whereas 20% (*n*=11) indicated co-ingestion of amphetamine from an 'illicit' source. For the compliant group the maximum L/D ratio in samples was 0.02. For non-compliant patient the average L/D ratio in samples was 0.89 (range: 0.3 to 1.2).

Conclusion
The clinical use of stereochemical analysis of amphetamine to monitor compliance for patients with ADHD is gaining in popularity. Except from forensic laboratories, our clinical biochemistry department is so far the only laboratory that provide this clinical service in Denmark.

Stereochemical profiling of amphetamine

A new clinical application to test compliance of patients with ADHD by urine analysis

Torben Breindahl, Brian S. Jensen, Kirsten Andreasen, Peter Hindersson

Department of Clinical Biochemistry, North Denmark Regional Hospital, Hjørring, Denmark

INTRODUCTION

The medical use of amphetamine-based drug to treat patients with attention deficit hyperactivity disorder (ADHD) has increased. Two types of drugs are used in Denmark: Lisdexamphetamine (> 98% of patients) and dextroamphetamine (minor use). Lisdexamphetamine (Elvanse ®, Aduvanz ®) is an inactive pro-drug that is converted *in vivo* to dextroamphetamine which is responsible for the pharmacological effects of the drug (Figure 1). Both drug substances contain only trace amounts of levoamphetamine as a synthetic impurity (<5%).

Amphetamine from 'illicit' drug sources is predominatly a racemic mixture of dextroamphetamine (D-amphetamine) and levoamphetamine (L-amphetamine) (1:1). After undergoing metabolization a ratio of L/D > 1 is usually observed as the D-isomer has an approximately 1 hour shorter half-life.

Stereochemical separation of amphetamine in biological samples can be routinely performed by liquid chromatography. Thus, the isomeric profile and L/D ratio can be used to monitor compliance of legal versus 'illegal' drug use.

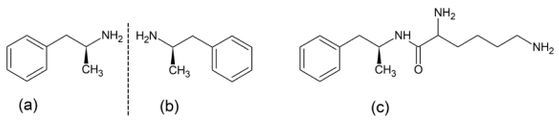

Figure 1. Chemical structures of **(a)** Dextroamphetamine (D-amphetamine); **(b)** Levoamphetamine (L-amphetamine). **(a)** and **(b)** are enantiomers e.g. mirror images that are non-superposable; **(c)** Lisdexamphetamine, a pro-drug which is hydrolzed *in vivo* to D-amphetamine and lysine.

RESULTS

Since October 2018, stereochemical profiling of amphetamine in urine was requested for patients (n=54) with subscriptions to lisdexamphetamine (Elvanse, Aduvanz). Of these patients 80 % (n=43) were shown to be compliant, whereas 20% (n=11) showed a L/D ratio ≥ 0.2 indicating co-ingestion of amphetamine from an 'illicit' source.

For the compliant group the maximum L/D ratio was 0.02. For the non-compliant patient group the average L/D ratio was 0.89 (range: 0.3 to 1.2). In several samples from compliant patients L-amphetamine was not detecable (Figure 2).

Traces of lisdexamphetamine could only be detected above 100 ng/mL in 35% (n=19) samples, also in samples from non-compliant patients (n=7). Thus, a positive test for lisdexamphetamine is not an indicator of compliance, and a negative test is not indicative of non-compliance.

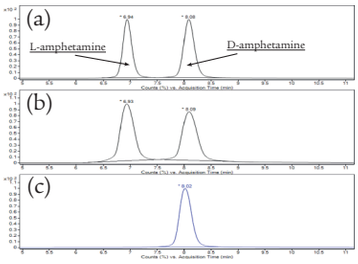

Figure 2. Stereochemical profiles of D- and L-amphetamine in urine detected with ultra-high performance liquid chromatography and tandem mass spectrometry (UHPLC-MS/MS). Peak (*left*): L-amphetamine; Peak (*right*): D-amphetamine. **(a)** Reference standard mixture; (**b**) Patient urine sample, L/D ratio: 1.09, indicating use of amphetamine from 'illicit' source; **(c)** Patient urine sample indicating compliance with the amphetamine-based drug lisdexamphetamine (L-amphetamine was not detected in this sample).

METHODS

UHPLC-MS/MS: Urine (1 µL) was directly injected into an ultra-high performance, liquid chromatography system (UHPLC) from Agilent Technologies using a Lux AMP chiral LC column, 150 x 3.0 mm (Phenomenex) with gradient elution as described by the manufacturer.

Mass spectrometry (MS/MS) was performed on a 6470 triple-quadrupole mass spectrometer from Agilent Technologies with electrospray ionization in multiple-reaction monitoring mode (MRM).

Prior to analysis, the samples were analyzed for amphetamine (cutoff 200 ng/mL) and traces of lisdexamphetamine (cutoff 100 ng/mL). Only samples with a requisition for assessment of ADHD medicine compliance were forwarded to stereochemical profiling.

CONCLUSION

The clinical use of stereochemical analysis of amphetamine to monitor compliance for patients with ADHD is gaining in popularity. Except from forensic laboratories, our clinical biochemistry department is so far the only laboratory that provide this clinical service in Denmark.

In general, there is a risk for patients with ADHD to be treated unjustly in drug-of-abuse testing [1], and stereochemical profiling of amphetamine – in an era where this drug is used for medical purposes – can free patients from suspicion and stigmatization.

Hitherto, Department of Prisons and Probation have requested 65% of the stereochemical profiles. Providing evidence for compliance is essential for inmates in Danish prisons with prescription to lisdexamphetamine as they are within a regimen where positive drug-of-abuse testing results could have serious and punitive consequences.

KEY POINTS

- Due to an increase in medical use of amphetamine-based drugs, there is a growing need for compliance testing.
- Conventional drug-of-abuse analysis cannot be used to distinguish the use of 'illicit' amphetamine from use of legal drugs prescribed to patients with ADHD.
- Amphetamine from 'illicit' sources are predominately racemic mixtures of dextroamphetamine and levoamphetamine (1:1).
- Amphetamine-based drug substances contain dextroamphetamine with only minor impurities of levoamphetamine (> 5% or less). In some urine samples levoamphetamine may not be detected.
- Stereochemical analysis of amphetamine in urine samples e.g. profiling of the enantiomers (D- og L-amphetamine) can be used to monitor compliance for patients with prescription to amphetamine-based drugs.
- Previous studies by George and Braithwaite [2] have shown that a L/D ration ≥ 0.2 is a safe decision point to distinguish use of amphetamine from 'illicit' sources and legal drug consumption.
- Interconversion *in vivo* of the stereoisomers of amphetamine has not been reported.

[1] Jensen, CM, Breindahl, T. Patients in medical treatment for attention deficit/hyperactivity disorder (ADHD): Are they at risk in drug screening? *ADHD Attention Deficit and Hyperactivity Disorders*, 2019, 11, 333-340.
[2] George S, Braithwaite S. Using amphetamine isomer ratios to determine the compliance of amphetamine abusers prescribed dexedrine. *Journal of Analytical Toxicology*, 2000, 24, 223-227.

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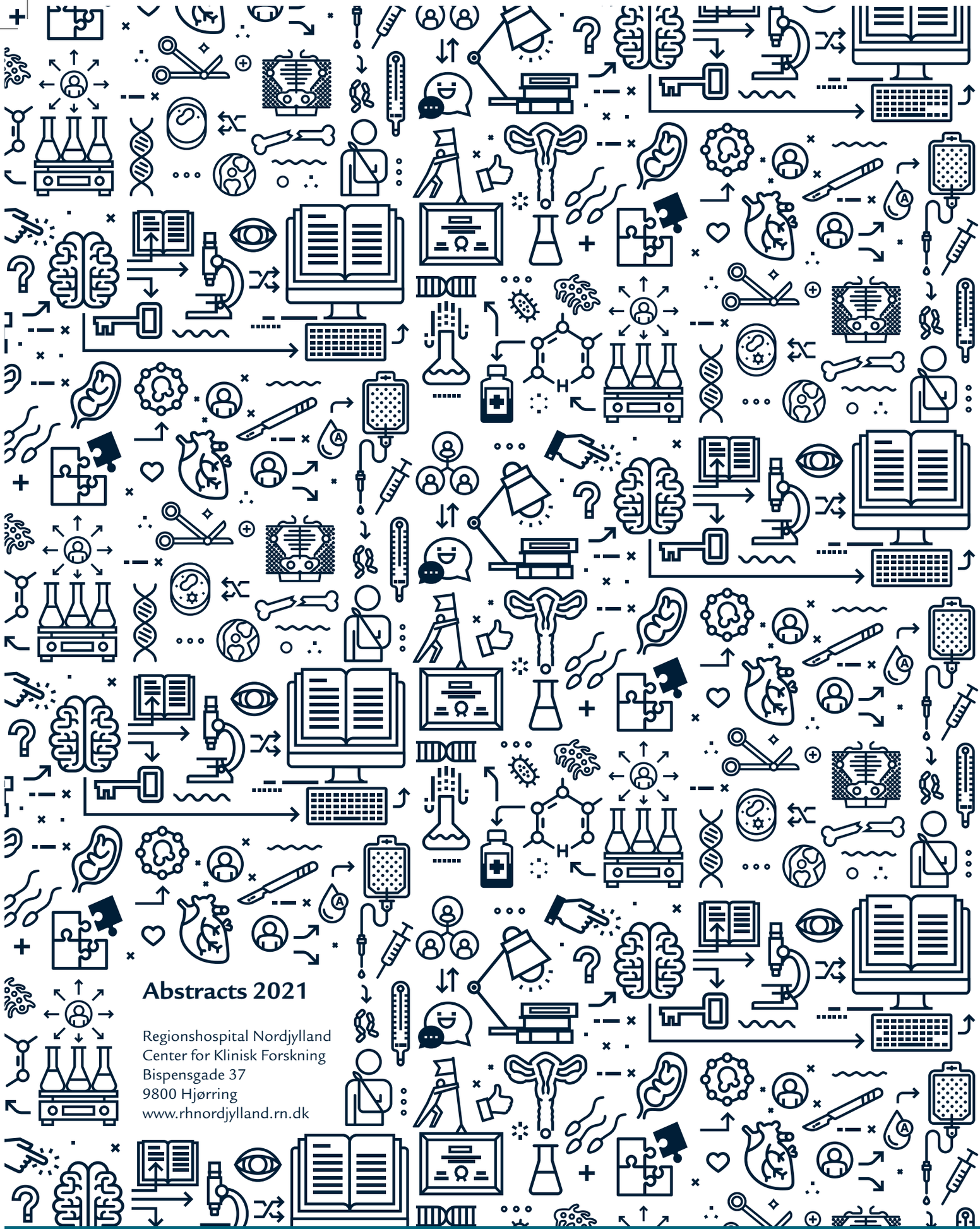

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Center for Klinisk Forskning
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