# Abstracts

Forskningsseminar 2024

**Camilla Tøvik Jørgensen**

# *Long-term recurrence after subsegmental pulmonary embolism compared to more proximal pulmonary embolism – findings from the TROLL registry*

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## Background

Subsegmental pulmonary embolism (SSPE) refers to clots situated peripherally, obstructing exclusively the subsegmental arteries. Multi-detector computed tomography pulmonary angiogram (CTPA) has led to an increased detection of SSPE. However, there is limited data on the long-term recurrence of venous thromboembolism (VTE) after an episode of SSPE.

## Aims

To determine the long-term incidence of VTE recurrence after cessation of anticoagulation in patients with SSPE in comparison to those with more proximal PE (non-SSPE), and to evaluate the 30-days all-cause mortality rate.

## Methods

Between January 2005 and May 2020, 1127 patients with a first-time CTPA-verified PE without cancer and no DVT were identified from The Venous Thrombosis Registry in ØstfOLd HospitaL (TROLL), Norway. PE cases were categorized into two groups: SSPE and non-SSPE. The 30-day cumulative mortality rate and the 5-year cumulative incidence of recurrent VTE for SSPE and non-SSPE were calculated.

**Results**

While 77 (6.8%) patients were diagnosed with SSPE, 1050 (93.2%) had non-SSPE. Median age was 70 years (IQR 58-80), and 589 (52.3%) were women. The 5-year cumulative incidence of VTE recurrence was 10.0% (95% CI 2.2-39.5) for SSPE compared to 23.9% (95% CI 20.0-28.4) for non-SSPE (p=0.09). Furthermore, the 30-day cumulative mortality rate was 10.4% (95% CI 5.3-19.7) for SSPE and 4.4% (95% CI 3.3-5.8) for non-SSPE (p= 0.02).

**Conclusion**

While the VTE recurrence rate following SSPE was lower than in non-SSPE cases, it remained high, with 10% recurrence within 5 years. Unexpectedly, the 30-days mortality rate following SSPE was significantly higher compared to non-SSPE cases.

**Grethe Heitmann**

# *Women´s experiences with being exposed to external aortic compression in the management of postpartum hemorrhage, a qualitative study in Norway*

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## Background

The prevalence and severity of postpartum hemorrhage (PPH) is increasing in both low- and high-income countries. External aortic compression has been shown to provide temporarily bleeding control prior to, or at the same time, as causal treatment. The aim of this study was to explore women´s experiences with being exposed to external aortic compression in the management of PPH after vaginal delivery.

## Methods

Ten women were included and semi-structured interviews were conducted in the period October 2023 to January 2024. Reflexive thematic analysis was used to analyze the interviews.

## Results

Through analysis, three themes were defined: "One of many interventions", "Need for adjusted information" and "In safe hands".

The participants described that external aortic compression was performed at the same time as other interventions and was, as other interventions, associated with pain. However, half of the parturients did not experience any pain or discomfort due

to this technique specifically. The participants also described the need for information adjusted to individual needs, prior to application of EAC, while the maneuver was performed, and afterwards. Finally, the participants described feeling safe while EAC was performed.

**Conclusions**

Early application of external aortic compression was well tolerated among the majority of the participants.

**Clinical implications**

Our findings underline the importance of information about the maneuver and that the information needs to be adjusted to individual needs.

**Ingvild Aurebekk**

# *The Norwegian Study of the Alternative DSM-5 Model for Personality Disorders – Junior*

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## Background

There is an urgent need to investigate the clinical utility of the Alternative DSM-5 Model for Personality Disorders (AMPD) in adolescents. This study aims to assess the AMPD's inter-rater reliability and clinical applicability, alongside its alignment with the ICD-11 model for Personality Disorders (PDs), within a clinical cohort from various Child and Adolescent Mental Health Services in Østfold, Norway.

## Methods

Personality functioning is assessed using a youth-specific adaptation of the Structured Clinical Interview for AMPD (SCID-5-AMPD-I-J), anticipated for publication by the American Psychiatric Association in 2024. The study involves 124 patients aged 16 to 18, presenting with varying degrees of personality pathology. For inter-rater reliability, the initial 24 patients will be assessed using SCID-5 AMPD-I-J twice by different assessors within a two-week interval. Severity ratings according to ICD-11 criteria will be obtained. In examining clinical utility, 100 patients will be randomly assigned to DSM-5 categorical or AMPD-based assessment. Participants will complete a questionnaire post-assessment to gauge perceived clinical utility, with therapists providing similar feedback upon receiving assessment reports. Enrollment begins in February 2024.

## Results

Inter-rater reliability findings will be disclosed upon including 24 patients. As of March 2024, 6 patients are included, hence ongoing results.

## Conclusions

Study findings are pending finalization, but initial feedback suggests patients find the examination beneficial, and the research group exhibits satisfactory agreement among participants thus far.

**Kristina A. Holten**

# *Fatigue in patients with newly diagnosed inflammatory bowel disease: Results from a prospective inception cohort, the IBSEN III study.*

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## Background

Although fatigue is common in inflammatory bowel disease (IBD), its pathogenesis remains unclear. This study aimed to determine the prevalence of fatigue and its associated factors in a cohort of patients newly diagnosed with IBD.

## Methods

Patients ≥18 years were recruited from the Inflammatory Bowel Disease South-Eastern Norway (IBSEN III) study, a population-based, observational inception

cohort. Fatigue was assessed using the Fatigue Questionnaire and compared with data from a Norwegian general population. Univariate and multivariate linear and logistic regression analyses were performed to evaluate the associations of total fatigue (TF) (continuous score) and substantial fatigue (SF) (dichotomized score ≥4) with sociodemographic, clinical, endoscopic, laboratory, and other relevant patient data.

**Results**

In total, 983/1509 (65.1%) patients with complete fatigue data were included (ulcerative colitis (UC), 68.2%; Crohn's disease (CD), 31.8%). The prevalence of SF was higher in CD (69.6%) compared with UC (60.2%) ($p<0.01$), and in both diagnoses when compared to the general population ($p<0.001$).

In the multivariate analyses, depressive symptoms, pain intensity, and sleep disturbances were associated with increased TF for both diagnoses. In addition, increased clinical disease activity and Mayo endoscopic score were significantly associated with TF in UC, whereas all disease-related variables were insignificant in CD. Similar findings were observed for SF, except regarding the Mayo endoscopic score.

**Conclusions**

SF affects approximately two-thirds of patients newly diagnosed with IBD. Fatigue was associated with depressive symptoms, sleep disturbances, and increased pain intensity in both diagnoses, while clinical and endoscopic activity were associated factors only in UC.

**Line Norman Kvenshagen**

# *Video-Recorded Airway Suctioning of Clear and Meconium-Stained Amniotic Fluid and Associated Short-Term Outcomes in Moderately and Severely Depressed Preterm and Term Infants*

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## Background

The aim of this study was to investigate delivery room airway suctioning and associated short-term outcomes in depressed infants.

## Methods

This is a single-centre prospective observational study of transcribed video recordings of preterm (gestational age, GA < 37 weeks) and term (GA ≥ 37 weeks) infants with a 5 min Apgar score ≤ 7. We analysed the association between airway suctioning, breathing, bradycardia and prolonged resuscitation (≥10 min). For comparison, non-suctioned infants with a 5 min Apgar score ≤ 7 were included.

## Results

Two hundred suction episodes were performed in 19 premature and 56 term infants. Breathing improved in 1.9% premature and 72.1% term infants, and remained unchanged in 84.9% premature and 27.9% term infants after suctioning. Among preterm and term infants admitted to the neonatal intensive care unit, 61 (81.3%) experienced bradycardia after airway suctioning. The majority of the preterm and term infants were bradycardic before the suctionprocedure was attempted. Among

the non-airway suctioned infants (n = 26), 73.1% experienced bradycardia, with 17 of them being admitted to the neonatal intensive care unit. There was a need for resuscitation ≥ 10 min in 8 (42.1%) preterm and 32 (57.1%) term infants who underwent airway suctioning, and 2 (33.3%) preterm and 19 (95.0%) term infants who did not receive airway suctioning.

**Conclusions**

In the infants that underwent suctioning, breathing improved in term, but not preterm infants. More non-suctioned term infants needed prolonged resuscitation. Airway suctioning was not directly associated with worsening of breathing, bradycardia, or extended resuscitation needs.

**Marie Sørenstua**

# *Evaluation of Erector spinae plane block for postoperative analgesia in laparoscopic ventral hernia repair: A Randomized Placebo Controlled Trial*

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## Background

The Erector spinae plane block (ESPB) reduces postoperative pain after several types of abdominal laparoscopic surgeries. There is sparse data on the effect of ESPB in laparoscopic ventral hernia repair. The purpose of this study was to test the postoperative analgesic efficacy of an ESPB for this procedure.

## Methods

In this prospective, double-blind, randomized controlled study, adult patients undergoing laparoscopic ventral hernia repair were randomly assigned to either bilateral preoperative ESPB with catheters at the level of Th7 (2 x30 ml of either 2.5 mg/ml ropivacaine or saline), with postoperative catheter top ups every 6 h for 24 h. The primary outcome was rescue opioid consumption during the first hour postoperatively. Secondary outcomes were total opioid consumption at 4h and 24 h, pain scores, nausea, sedation, as well as Quality of Recovery 15 (QoR-15) and the EuroQol-5 Dimensions (EQ-5D-5L) during the first week.

## Results

In total, 64 patients were included for the primary outcome measure. There was no significant difference in rescue opioid consumption (oral morphine equivalents (OME)) at one hour postoperatively, with the ESPB group 26.9 ±17.1 mg versus

32.4±24.3 mg (mean±SD) in the placebo group (p= 0.27). There were no significant differences concerning the secondary outcomes during the seven-day observation period. Seven patients received a rescue block postoperatively, providing analgesia in five patients.

**Conclusions**

We found no difference in measured outcomes between ESPB and placebo in laparoscopic ventral hernia repair. Future studies may evaluate whether a block performed using higher concentration and/or at a different thoracic level provides more analgesic efficacy.

**Mette Kure Nikolaisen**

## *Multiple symptoms during the first week after intensive care unit discharge -a longitudinal cohort study*

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**Background**

During intensive care unit (ICU) stay, patients experience a number of different symptoms, such as pain, shortness of breath and worrying. However, the first week after ICU discharge, data about these symptoms are scarce. A broader approach understanding these symptoms is necessary for more tailored symptom management in the first period after ICU discharge.

**Methods**

A prospective, longitudinal study was conducted at six medical and four surgical wards at one hospital in Norway. Patients ≥ 18 years old, surviving ICU treatment were included. Thirty-two different symptoms were evaluated at day 1, 3, 5 and 7 after ICU discharge, using the Memorial Symptoms Assessment Scale. Symptom occurrence (yes/no), frequency (1-4 points), severity (1-4 points), and distress (0-4 points) were described using descriptive statistics. We used 95% confidence intervals to express the precision of the estimated occurrence and to evaluate changes over time.

**Results**

In total, 164 patients were included. Patients reported median 12, 13, 13 and 13.5 symptoms at day 1, 3, 5 and 7, respectively. At day one 83% reported lack of energy as the most occurring symptom, followed by dry mouth (83%), cough (74%), feeling drowsy (71%), lack of appetite (57%), shortness of breath (56%), difficulty sleeping (54%), pain (54%), worrying (49%), feeling sad (47%), difficulty concentrating (43%), feeling nervous (42%) and feeling bloated (40%). The occurrence of these symptoms remained stable throughout the first week. At day one, difficulty sleeping, lack of energy, and dry mouth were the most frequent symptoms (median 4 points). These symptoms were also the most severe symptoms, in addition to worrying, feeling sad and pain (median 3 points). Difficulty sleeping, worrying, and feeling sad were the most distressing symptoms (median 3 points).

**Conclusions**

ICU survivors reported a high symptom load during the first week after ICU discharge. The occurrence of these symptoms did not change significantly throughout the week.

**Clinical implications**

With knowledge from the present study about the most prevalent symptoms and their levels of frequency, intensity, and distress, we can be able to provide more tailored symptom management, at the right time points in future support strategies and plans for the rehabilitation.

**Sigve Ådalen**

## *Early Life Dynamics of Torque-teno Virus Infection and Viral Loads: Insights from the PreventADALL Mother-Child Cohort Study*

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**Background**

Torque-teno virus (TTV) is a common circular DNA virus which constitutes a major part of the human virome. It infects almost all individuals and causes lifelong infection. TTV replicates in various body tissues but the effects on health are unclear. The aim of this work is to investigate the timing of TTV infection in infants and to identify risk factors associated with early infection and high viral load in blood.

**Methods**

This study is a part of PreventADALL, a large mother-child cohort study conducted at Oslo University Hospital, Østfold Hospital Trust, and Karolinska University Hospital. The study includes participants with available blood samples at 0, 3, and/or 12 months of age (N=842). Data collection involves electronic questionnaires and interviews, clinical investigations, and the collection of serum samples which are analyzed for TTV using a commercial real-time PCR kit.

**Results**

At birth, 4,1% of infants test positive. By 3 months of age, the percentage has risen to 60%, and by 12 months of age, almost all children are infected (98%). Ongoing analyses are investigating risk factors associated with early infection (testing positive at 3 months of age) and whether TTV-positivity at birth is due to maternal contamination.

**Conclusions**

TTV is part of the human virome, and most infants are infected by 12 months of age.

**Clinical implications**

This study lays the groundwork for further analysis on how early TTV infection and viral load may influence immune development, examining its association with general infection susceptibility, allergic sensibilization and wheezing/asthma in early childhood.

**Stacey Haukeland-Parker**

# *Exercise capacity, dyspnoea and health-related quality of life six months after rehabilitation in patients with persistent dyspnoea following pulmonary embolism*

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**Background**

Rehabilitation is safe and effective following pulmonary embolism (PE), but little is known regarding the long-term effect. Our aim was to assess the effect of rehabilitation six months after completion of an exercise-based intervention in patients with persistent dyspnoea following PE.

**Methods**

A two-centre, randomised controlled trial compared eight weeks of rehabilitation to standard care. Patients were assessed six months after completion of the intervention. Exercise capacity was measured with the incremental shuttle walk test (ISWT). Dyspnoea (Shortness of Breath Questionnaire, SOBQ) and generic and disease-specific health-related quality of life (HRQoL) were assessed with self-reported questionnaires. Data were analysed with a Tobit mixed effects model.

**Results**

211 patients with persistent dyspnoea after PE were included and 132 completed the ISWT six months post-intervention. The rehabilitation group performed significantly better on the ISWT at eight weeks (93 meters, SD:18, 95%CI:58,127) and six months (105 meters, SD:20, 95%CI:66,144) as compared to the control group. A significant reduction in dyspnoea (SOBQ) was seen at six months only in the rehabilitation group (SD:-3.7,95% CI:-6.5,-0.8). No significant improvements in HRQoL were observed.

**Conclusions**

Eight weeks of exercise-based rehabilitation significantly improved exercise capacity and dyspnoea six months after the intervention in PE patients with persistent dyspnoea. No improvements in HRQOL were detected.

**Clinical implications**

Rehabilitation is a highly valuable and cost-effective treatment aiming for long-term lifestyle adaptions to maintain the benefits. Our findings suggest that the positive short-term effects of rehabilitation following PE is maintained six months after the intervention period.

**Tor-Morten Kvam**

## *Exploration of MDMA-assisted therapy for major depressive disorder: a proof of principle study*

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### Background

Major depressive disorder (MDD) is one of the leading causes of disability and impaired quality of life, with the current treatment not adequately effective for many patients. MDMA-assisted therapy (MDMA-AT) has shown great promise in the treatment of post-traumatic stress disorder (PTSD) with a satisfactory safety profile. However, there are no studies of MDMA-AT in individuals with a primary diagnosis of MDD.

Here we present preliminary findings from the first eight participants in an ongoing, investigator-initiated, and publicly funded clinical trial of MDMA-AT for MDD. Our study aims to explore the feasibility and safety of open-label MDMA-AT in individuals with MDD, offering insights into treatment efficacy.

## Methods

Participants were recruited to a single site in Norway with previous experience from a sponsored MDMA-AT for PTSD trial. Twelve individuals aged 18 years and older, diagnosed with MDD according to DSM-5 criteria, will receive open-label MDMA with a flexible dose regimen and within a manualized therapeutic setting across two dosing days over four weeks. Prior to and following the MDMA dosing sessions, there will be a total of nine 90-minute non-drug psychotherapy sessions.

The primary outcome is change in MDD symptom severity, as measured by the mean change in Montgomery and Asberg Depression Rating Scale (MADRS) scores from Baseline to the outcome visit 8 weeks after the second MDMA session.

In addition to descriptive statistics, the non-parametric two-tailed Wilcoxon signed ranks tests will be used due to the limited sample size. For more methodological details, see (1).

## Results

Recruitment started in January 2023, and the study will be finished in December 2024. 83 individuals underwent phone screening and 20 on-site screening for eligibility. Six were screen failures, and out of the 14 initially enrolled participants, two did not have their enrollment confirmed (exclusion criteria 3 and 5, respectively). There were no instances of post-dosing early termination, dropouts, or lost to follow-up, serving as an indicator of tolerability.

Out of the initial eight participants, five were women, and the average age at enrollment was 44.4 years.

The mean score on the MADRS was 28.75 (SD 5.65) at baseline and 13.00 (SD 10.60) at the outcome visit, giving a mean change in the MADRS scores of -15.75 (SD 7.50) and the median change was 16.50. Utilizing 1000 bootstrap resamples of the mean change resulted in a CI of 10.76 to 20.73. Relative to baseline, the MADRS scores were significantly reduced to the outcome visit ($z = -2.5$; $p=0.008$).

Adverse events were generally mild and transient, and there were no instances of adverse events of special interest or serious adverse events. However, several participants experienced the therapeutic process as challenging with temporary increase in anxiety and distress, requiring intensive therapeutic support and, at times, extra sessions.

## Conclusion

This research offers initial support for the safety and feasibility of MDMA-AT in treating MDD, as well as a preliminary indication of efficacy. It also encourages additional trials with more stringent methodologies to thoroughly explore the therapeutic possibilities of this approach.

Topics: MDMA-assisted therapy, major depressive disorder, clinical trial


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## Conflicts of Interest

The author(s) declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article:

TMK received lecture honorarium from Lundbeck. OAA is a consultant for Cortechs.ai and has received speaker honorarium from Otsuka, Janssen, Lundbeck and Sunovion. LHS is a Medical Director at Axonklinikken, and has received lecture honorarium from Janssen. IWG runs an online training in MDMA-AT through Psykologvirke AS. All authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Reference


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**Elia Asady**

# *Development of a new disease-specific health-related quality of life questionnaire for deep vein thrombosis*

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## Background

A disease-specific health-related quality of life (HRQoL) questionnaire for DVT patients developed according to the current guidelines does not exist.

## Aim

To develop a new disease-specific HRQoL questionnaire for DVT in accordance with state-of-the-art recommendations.

## Methods

The questionnaire development followed a standardized phase I-IV development, of which results from phase III are presented in this abstract. Results from the previous phases were used to create a 52-item questionnaire. DVT patients were asked to complete the questionnaire. In phase III a total of 128 patients from Norway, Canada and The Netherlands completed this questionnaire. Phase III was conducted in two parts. First 33 patients completed the questionnaire to identify practical and linguistic clarity issues, whereas 95 patients completed the questionnaire in the second part. A preliminary psychometric analysis as well as correlation-based methods, Cronbach's α, and intra-class correlation coefficient were assessed for item reduction.

**Results**

The first part of phase III resulted in minor language adjustments, the removal of two items and one item was divided in to two, resulting in a 51-item questionnaire. Floor and ceiling effects, as well as the above-mentioned methods were used to identify the relevant items for HRQoL of DVT patients. The final questionnaire consists of 23 items that fulfilled the criteria for item retention.

**Conclusion**

We have developed a HRQoL questionnaire for DVT according to the latest guidelines for questionnaire development. The questionnaire is now ready for psychometric validation in different languages.

**Erik Melin**

## *In vivo distribution of cerebrospinal fluid tracer in human upper spinal cord and brain stem*

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**BACKGROUND**

Intrathecal injection is an attractive route through which drugs can be administered and directed to the spinal cord, restricted by the blood-spinal cord barrier. However, in vivo data on the distribution of cerebrospinal fluid (CSF) substances in the human spinal cord are lacking. We conducted this study to assess the enrichment of a CSF tracer in the upper cervical spinal cord and the brain stem.

**METHODS**

After lumbar intrathecal injection of a magnetic resonance imaging (MRI) contrast agent, gadobutrol, repeated blood samples and MRI of the upper cervical spinal cord, brain stem, and adjacent subarachnoid spaces (SAS) were obtained through 48 hours. The MRI scans were then analyzed for tracer distribution in the different regions and correlated to age, disease, and amounts of tracer in the blood to determine CSF-to-blood clearance.

**RESULTS**

The study included 26 reference individuals and 35 patients with the dementia subtype idiopathic normal pressure hydrocephalus (iNPH). The tracer enriched all analyzed regions. Moreover, tracer enrichment in parenchyma was associated with tracer enrichment in the adjacent SAS and with CSF-to-blood clearance. Clearance

from the CSF was delayed in patients with iNPH compared with younger reference patients.

**CONCLUSION**

A CSF tracer substance administered to the lumbar thecal sac can access the parenchyma of the upper cervical spinal cord and brain stem.

**CLINICAL APPLICATION**

Since CSF-to-blood clearance is highly individual and is associated with tracer level in CSF, clearance assessment may be used to tailor intrathecal treatment regimes.

**Klara Friberg**

# *The association between mental health symptoms and hope following intensive care unit discharge: findings from a longitudinal cohort study*

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## Background

Hope is important for mental health during recovery after critical illness. However, what the levels of hope are and the ways in which mental health symptoms after intensive care unit (ICU) treatment are associated with hope the first year after ICU admission, are not previously studied.

## Methods

Self-reported hope was measured in 73 ICU patients using the Herth Hope Index (HHI; range: 12-48) at 3, 6, and 12 months after ICU stay. Data on PTSS, anxiety,

depression, demographics and clinical data were analyzed using descriptive statistics and linear mixed model regression analyses.

**Results**

The median hope score at 3, 6, and 12 months were 41.0 (IQR: 36.0; 44.0), 40.0 (IQR: 35.0; 44.0), and 42.0 (IQR: 35.0; 45.0), respectively. PTSS, anxiety, and depression were analyzed in three multivariate mixed regression models. Being employed before ICU admission, having a longer hospital stay, and lower levels of PTSS, anxiety and depression 3 months after ICU admission were significantly associated with higher hope during the first year after ICU admission.

**Conclusions**

Hope scores remained stable during the first year after ICU admission. Healthcare professionals should be aware that mental health symptoms may impact hope the first year after ICU admission.

**Clinical implications**

Future studies exploring mental health symptoms and hope in large samples are warranted.

**Linn Heitmann**

# *OPTIMIZING ACUTE ISCHEMIC STROKE DIAGNOSTICS USING ARTIFICIALINTELLIGENCE – EXPERIENCE FROM A NATIONAL PROJECT*

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## Background and aims

Although the numbers of acute ischemic stroke (AIS) patients with large vessel occlusions (LVO) being offered endovascular treatment (EVT) are increasing, there is still a need to improve acute diagnostics reducing the time from symptom onset to treatment. The purpose of the project is to streamline the acute stroke pathway by using artificial intelligence to automatically analyze
CT images.

## Methods

In an ongoing national multicentre study, the use of multiphase CT angiography (mCTA) with software for automatic detection of LVO, calculation of infarct volume and penumbra is compared with standard radiological diagnostics. It is being assessed whether the time to EVT start can be reduced and whether a greater proportion of patients with LVO can be detected using the software compared to standard diagnostics. 465 patients are planned to be included within a 48-month periode.

**Results**

So far, 601 patients have been analyzed by AI-software. 16 patients have been treated with EVT. Primary stroke centres in Health South-East had median 8 min shorter time from CT start to EVT start in AIS patients compared to time before implementation of AI-software,156 min (IQR119,176) vs 164 min (IQR145,198). Primary stroke centres in Health North using software had median 3,5 min shorter time from CT start to contact air ambulance in AIS patients compared to hospitals with standard diagnostics, 36,5 min (IQR26,48) vs 40 min (IQR22,68) respectively.

**Conclusions**

The use of artificial intelligence in acute radiological diagnostics is promising to make the acute stroke pathway more efficient and contribute to equalizing differences in the health service.

**On behalf of:** AI-STROKE group

**Martin G. Gregersen**

# *Effects of Fibular Plate Fixation on Ankle Stability in a Weber B Fracture Model with Partial Deltoid Ligament Sectioning*


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## Background

Weber B fractures with concomitant deltoid ligament injury have traditionally been operated with open reduction and internal fixation of the fibular fracture. Recently, clinical studies have suggested that some fractures have concomitant partial deltoid ligament injury with the deep posterior tibiotalar ligament intact (SER4a), allowing for nonoperative treatment in this subgroup. This study explores whether plate fixation of

the fibula improves ankle stability in a SER4a injury model. And if so, does it restore native ankle stability?

**Methods**

Fifteen cadaver ankle specimens were tested using an industrial robot as: intact joint, SER4a models without plate fixation of the fibula and SER4a models with plate fixation of the fibula. The robot measured ankle stability in lateral translation, valgus, and internal- and external rotation in three talocrural joint positions: 10 degrees dorsiflexion, neutral, and 20 degrees plantar flexion.

**Results**

The talar shift and tilt tests showed no differences between the SER4a model with and without fibular plate fixation at neutral ankle position with a mean difference of -.16 millimeters (95% CI -.33 to .01 millimeters, *P* = .071) for talar shift and -.15 degrees (95% CI -.01 to .30 degrees, *P* = .068) for talar tilt. However, plate fixation increased external rotation stability with mean improvements ranging from -7.43 to -9.52 degrees (*P* < .001 for all comparisons) did not restore intact ankle stability. For internal rotation, plate fixation resulted in minor differences.

**Conclusions**

The results suggest that plate fixation of the fibular fracture primarily improves external rotation stability but does not substantially improve lateral translation, valgus, or internal rotation stability in SER4a injury models.

**Monica Kløvstad Siksjø**

## *Evaluating FDG-PET as a Methodology for Assessing Cognitive Function in Brain Metastases Patients Post-Treatment*

Monica Kløvstad Siksjø, Tone Fredheim, Marie Birketvedt, Guro Lindviksmoen Astrup, Olav Erich Yri, Mona-Elisabeth Rootwelt-Revheim, Therese Seierstad

### Background

Kognitiv svekkelse evalueres ofte ved bruk av kognitive tester eller selvrapporteringsskjemaer, men resultatene samsvarer ofte ikke med pasientens erfaringer. 18F-Fluorodeoxyglukose positronemisjonstomografi (18F-FDG-PET) anvendes rutinemessig for diagnostisering av nevrodegenerative sykdom som demens og Alzheimer. Vi skal undersøke om 18F-FDG-PET kan erstatte dagens kognitive tester og være en objektiv avbildningsbiomarkør for patologiske kognitive endringer etter kreftbehandling i pasienter med hjernemetastaser ved å måle på glukosemetabolismen i ulike områder i hjernen og sammenligne med pasientenes resultater på kognitive tester.
Vårt første mål er å undersøke hvor robust 18F-FDG-PET-metoden er for problemstillingen. Det finnes et bredt utvalg av programvareløsninger til semikvantifisering og analysering av PET-hjernebilder. Analyseresultater oppnådd med tre av de mest utbredte programvarene i klinisk bruk vil bli sammenlignet for å vurdere i hvilken grad metodens nøyaktighet og pålitelighet er avhengig av valgt programvare.

### Methods

Trettisyv pasienter (22 kvinner og 15 menn) med tidligere behandlet hjernemetastase har utført 18F-FDG-PET-undersøkelse av hjernen. FDG-opptaket i ulike hjerneregioner vil bli normalisert mot hjernebroen (pons) ved bruk av tre ulike analyseverktøy: CortexID Suite (GE Healthcare), SyngoVia (Siemens Healthineers) og en voksel-basert analysemetode (Neurostat/SPM). PET-bildene vil bli analysert og sammenlignet med normaldatabase i de respektive programvarene for å kartlegge om det relative glukoseopptaket i de ulike hjerneregionene samsvarer på tvers av programvarene.

**Results**

Analyser pågår.

**Conclusions**

N/A.

**Clinical implications (if relevant)**

Hvis 18F-FDG-PET/CT viser seg å være en egnet biomarkør for måling av kognitiv svekkelse etter kreftbehandling så kan metoden enkelt kombineres med dagens kliniske 18F-FDG-PET/CT-oppfølging av mange kreftpasienter. Dette kan øke kvaliteten på kreftbehandling og oppfølging.