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PREFACE

The 35th Congress of the Scandinavian Association of Urology (NUF2025) took place in Gothenburg, Sweden, June 4-7th, 2025.

The organizers would like to thank all the contributors for their efforts to help elevate the scientific level of the meeting. We would also like to express our gratitude to the Scandinavian Journal of Urology for the collaboration and publication of this abstract book.

Lotta Renström Koskela, Chairman of the Organizing Committee

Amir Sherif, Chairman of the Scientific Committee

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ABSTRACTS

AS-1.001

Agreement Between Routine-Dose and Lower-Dose CT With and Without Deep-Learning Denoising Allows Interchangeability for Active Surveillance of Small Renal Masses: A Multi-Observer Study

Bendik Breen[1], Jens Borgbjerg[1], Anne Negård[1], Tommy Kjærgård Nielsen[2], Stig Müller[3], Jens Brøndum Frøkjær[4]

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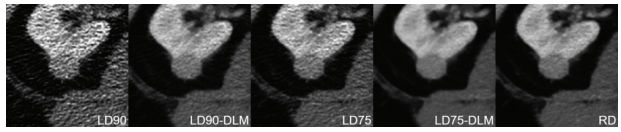
Introduction: Serial imaging as part of CT-based active surveillance (AS) of small renal masses (SRMs) is a cause of concern. We aimed to assess the interchangeability of routine-dose (RD) and lower-dose (LD) contrast-enhanced CT scans, with and without a vendor-neutral DICOM-based deep learning noise reduction model (DLM), in evaluat-ing the maximum diameter of SRMs during AS. Secondary aims included evaluating the accuracy and reproducibility of tumor nearness (TN) and tumor shape irregularity (TSI) assessments, as well as comparing subjective and quantitative image quality across dose levels.

Method: We included 70 CT scans (RD) from AS patients. Using a simulation technique, lower-dose CT images were generated from the RD to simulate 75% (LD75) and 90% (LD90) dose reduced image sets. Two additional lower-dose image sets were generated with the DLDM applied (LD75-DLDM and LD90-DLM). Nine radiologists evaluated these five datasets for a total of 350 CT case evaluations with respect to tumor size, TN, and TSI. Subjective image quality and quantitative metrics were also assessed.

Results: LD75 CT was found to be interchangea-ble with RD scans in SRM diameter assessment, with a 95% limit of agreement with the mean (LOAM) of ±2.4 [2.1-2.4] mm for LD75 versus ±2.2 [2.3-2.6] mm for RD. However, a 90% dose reduction compromised reproducibility (LOAM ±3.0 [2.8-3.2] mm), whereas the application of the DLDM at this dose level preserved reproducibility (LOAM ±2.4 mm [2.3-2.6]). TN and TSI assess-ments showed similar kappa agreement across all image sets. Subjective and quantitative image quality assessments confirmed that DLM effectively restores image quality at reduced dose levels.

Conclusion: A 75% reduction in radiation dose is feasible for SRM assessment in AS using CT with a conventional iterative reconstruction technique. Applying a DLM allows dose reduction to sub-millisievert levels. These findings support the incorporation of lower dose imaging protocols in clinical guidelines.



AS-1.002

Treatment patterns and survival for patients with renal cell carcinoma and synchronous metastatic disease (M1) in Sweden 2014-2020 - A population-based study

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Introduction: The objective was to describe treatment patterns and identify factors associated with treatment choice and survival in real-word patients with syn-chronous metastatic renal cell carcinoma (RCC M1).

Method: A nationwide population-based study. The data of 1,099 patients with RCC M1 diag-nosed 2014-2020 were extracted from the Renal Cell Cancer Database Sweden (RCCBaSe). Associations were assessed using logistic regression (treatment choice) with calculation of odds ratios (OR). Prognostic models were constructed by multivariable analysis using Cox regression, and strength of associations expressed by hazard ratios (HR) for death due to RCC (RCC-specific survival, RCSS) and any cause (overall survival, OS) with 95% confidence intervals (CI).

Results: Eighty-seven percent were actively treated (AT), with cytoreductive nephrectomy (CN, 52%) or upfront oncological treatment (ONC, 35%). Thirteen percent received best supportive care (BSC). AT was associated with younger age (OR, 0.89; 95% CI, 0.86-0.92), lower Charlson comor-bidity index (CCI; OR, 0.90; 95% CI, 0.83-0.97), absence of lymph node (N) metastases (OR, 0.48; 95% CI, 0.28-0.83) and multidisciplinary team discussions (MDT; OR, 2.51;

95% CI, 1.37-4.49). Among AT patients, larger tumor size (OR 1.01; 95% CI, 1.00-1.01) or treatment at university hos-pitals (OR, 2.23; CI, 1.59-3.17) favored CN. In contrast, MDT (OR for CN, 0.26; CI, 0.14-0.45), N+ (OR for CN, 0.56; CI, 0.40-0.79), number of metastatic sites (OR for CN, 0.43; CI, 0.35-0.53), higher CCI (OR for CN, 0.86; CI, 0.81-0.91), and older age (OR for CN, 0.98; CI, 0.96-1.00) favored ONC. In AT patients, CN was associated with better survival compared to ONC with HR 0.62 (RCSS) and 0.63 (OS). BSC was associated with worse survival, with HR 2.45 (RCSS) and HR 2.75 (OS) com-pared to ONC.

Conclusion: We identified key predictors of treatment choice as well as of RCC-specific and overall survival in real-world patients with synchronous metastatic RCC in Sweden.

AS-1.003

Feasibility and implementation of adjuvant pembrolizumab in renal cell carcinoma in the Stockholm area 2022-2024

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Introduction: Adjuvant pembrolizumab (Pem) for 1 year may be indicated following surgery with curative intent for patients with clear cell renal cell carcinoma (RCC) with defined risk factors and was introduced in Sweden 2022.

Method: Retrospective analysis of medical records from all RCC patients discussed at a multidisciplinary team conference (MDT) with respect to adjuvant Pem, in the Stockholm area March 2022-Dec 2024 (n=95).

Results: Patients were T3aN0 (n=88), T3bN0 (n=4), T2bN0 (n=3). Two patients had N+ and 3 patients M1 NED. Median follow-up (FU) was 14.6 months (1.2- 34.0). Pem was started in 57 pa-tients (60%), in median 11.9 weeks from surgery. In 38 patients (40%) the decision was to surveil only (Surv). Pem patients were younger (median 60.9 vs 70.1, p<0.0001), had lower ASA class (OR 0.18, p=0.0003), more often ECOG 0 vs ≥1 (OR 7.13, p=.0001), lower Charlson comorbidity index (OR 0.04, <0.0001), and larger tumors (mean 8.9 vs 6.7 cm, p=0.013) more often with microvascular invasion or necrosis (OR 4.09, p=0.03), compared to Surv patients. After a median FU of 12 months Pem was ongo-ing in 23 pts (40%). Thirty-four pts (60%) had discontinued treatment after a median time of 11.8 months (1.5-13.5), either due to completion of 1 year planned treatment (59%), toxicity (29%) or disease progression (12%). Eight patients reported grade 3 (14%) an no patient had grade 4-5 toxici-ty. Sixteen patients (28%) required corticosteroids. Thirteen out of 95 patients relapsed during the observation period (14%), 7 out of 57 in the Pem (12%), and 6 out of 38 in the Surv group (16%).

Conclusion: Adjuvant pembrolizumab was feasi-ble. The proportion of patients completing the full 12-month course, discontinuations due to toxicity and early recurrence rates were all relatively similar to those of the Keynote-564 trial. Selection factors for active treatment were identified.

AS-1.004

Body composition and renal cell cancer prognosis in elderly patients

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Introduction: Predicting prognosis and complication risks in elderly patients with renal cell carcinoma (RCC) remains a clinical challenge. Sarcopenia is a known prognostic factor for overall survival, but its role in RCC-specific mortality and surgical complications is unclear. This study investigates whether body composition parameters, including muscle and fat indexes, are associated with mortality and surgical complications in elderly RCC patients.

Method: This retrospective study included 165 RCC patients aged 75 years or older treated at Tampere University Hospital between 2003 and 2017. The analysis focused on patients who underwent surgery and whose tumor histology was known. Pre-operative computed tomography (CT) scans were used to assess visceral adipose tissue index (VATI), subcutaneous adipose tissue index (SATI), psoas muscle index (PMI), skeletal muscle index (SMI), and waist circumference. Cox regression was applied to evaluate mortality risk, and logistic regression was used to assess the association between body composition and major surgical complications (Clavien-Dindo grade ≥ 3).

Results: The average patient age was 79.5 years at diagnosis, with a mean follow-up was 6 years. 56% of patients were women. Survival rate was 16% at 10 years.No significant associations were found between body composition parameters and postoperative complications. SMI showed an inverse trend approaching significance for mortality risk (p = 0.06), but no parameter reached statistical significance for overall survival.

Conclusion: In elderly RCC patients, muscle and fat indices derived from CT imaging are not predictive of surgical complications or overall survival. Further studies are needed to identify reliable prognostic markers in this population.

AS-1.005

Oncological results after accidental tumor incision in partial nephrectomy

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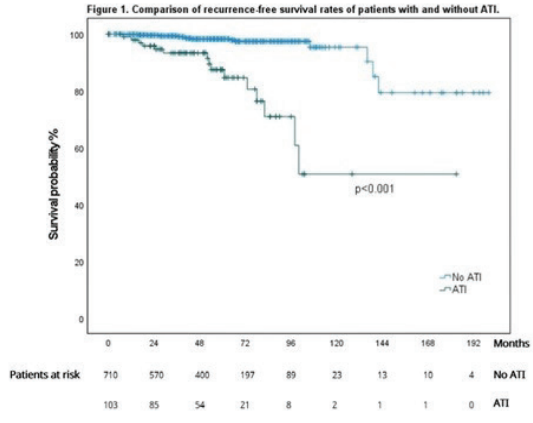
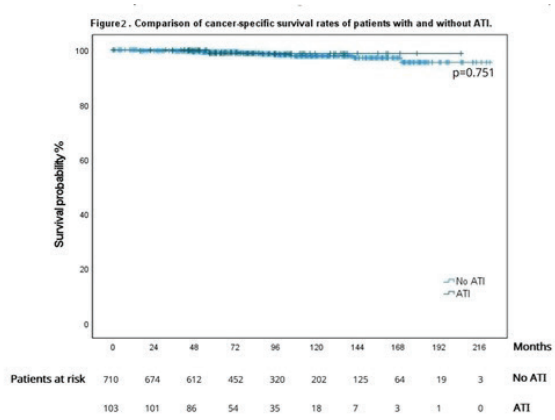
Introduction: Incising or breaking a tumor during renal cell carcinoma (RCC) surgery is considered an adverse event. The aim of our study was to examine the oncological outcomes of patients with accidental tumor incision (ATI) during any kind of partial nephrectomy (PN) in cT1 patients.

Method: We conducted a retrospective single center study of patients who underwent open, laparoscopic or robot assisted PN for cT1a-b RCC. The groups were divided into those with ATI during PN and those without. The Kaplan-Meier method and a log-rank test were used to estimate the recurrence-free survival (RFS) and the cancer-specific survival (CSS).

Results: Among 813 patients, 103 (12.7%) ATI were registered. Disease recurrence was present in 14.6% in the ATI group and 2.1% in the group without ATI. The difference in RFS was statistically significant (p<0.001) during a 52-month median follow-up. ATI associated with larger tumor diameter and higher RENAL score. Difference in CSS between the two groups was not statistically significant (p=0.751) during a 82-month follow-up. Limitations of this study include the retrospective setting in a single center.

Conclusion: Our study concludes that the presence of ATI during partial nephrectomy for renal cell carcinoma significantly increases disease recurrence but doesn't affect the cancer specific survival during an intermediate follow-up time.





AS-1.006

Multidisciplinary Team Conference in Renal Cancer - a NORENCA study

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Introduction: Multidisciplinary team conferences (MDT) play a deciding role for the treatment of individual renal cancer patients. Variations such as frequency, participation and guideline adherence, may impact patient outcomes. This study aims to chart MDT-practices in 70 urology departments across 5 Nordic countries. Identifying variations in national and european guideline usage, conference norms and inclusion criteria for renal cancer cases.

Method: This survey-questionnaire based study was designed to gather data on practices and structure for surgical renal cancer MDT-conferences. The inclusion criteria being responsible renal cancer surgeons in respective departments out of 70 Nordic urology departments: Denmark, Sweden, Norway, Finland and Iceland. Questions were designed by NORENCA group, to get data of frequency of meetings, specialist participation, conference norms and inter department cooperation and whether the individual department followed national and/or international guidelines. Final version was made and distributed through Google® Forms (Alphabet Inc. Mountain View, CA USA). The survey was distributed electronically primarily via mail. Reminders were mailed in cases with no response.

Results: The study achieved a response rate of 58.6%. Responserates: 63% (FIN), 100% (IS), 75% (DK), 47% (NO), 57% (S). Department

percentages using patient template in MDT: 10% (FIN), 100% (IS), 50% (DK), 53% (NO), 53% (S). The study showed how many patients were discussed on the MDT before treatment: 0% (FIN), 0% (IS), 66% (DK), 57% (NO), 18% (S), Note that M+ will be discussed 40% (FIN), 29% (NO), 41% (S). Results show different practices and challenges, such as limited ressources in non-academic hospitals and variations in selection for MDT discussions. E.g. differences when prioritizing cases for MDT, in relation to high risk cases versus more acute/complex cases.

Conclusion: Our study showed the need for further initiatives and research to promote MDT as a cornerstone in providing

AS-1.007

Tumor thrombus level in patients with Renal Cell Carcinoma an important risk factor for postoperative serious adverse events

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Introduction: Renal cell carcinoma (RCC) has a unique propensity for vascular invasion, leading to the formation of tumor thrombus (TT) in the renal vein, ability to extend into the inferior vena cava (IVC) and up to the right atrium. Radical nephrectomy with thrombectomy remains the standard treatment but this highly complex procedure carries substantial perioperative risks, including blood loss, pulmonary embolism, prolonged hospitalization, and mortality.

Method: Retrospectively, 865 patients with RCC, treated at Norrland University Hospital, between 1982 and 2018 were reviewed. Preoperative variables included tumor thrombus level, WHO performance status (WHO), Charlson comorbidity index (CCI), size, age, sex and any postoperative complication. Tumor thrombus level classified into five categories. Postoperative complications were graded according to Clavien Dindo classification (CD). Multivariate logistic regression was performed to identify independent risk factors for severe complications (CD 3-5).

Results: Among 865 patients, 252 (29.1%) had a tumor thrombus. CD 3-5 complications were found in 15 of 390 patients with T1; 6/154 T2; 23/303 T3, and 6/28 with stage T4. Patient age, tumor size, TT level, WHO, and CCI were univariately correlated to the risk of severe postoperative complications while gender was not. Patients with TT-level 4 had the highest proportion of complications (35%). In a logistic regression model, adjusted for age, size, TT-level, WHO, and CCI, only TT-level (p= 0.002) and WHO (p =0.010) remained as significant predictors of severe complications, whereas age, size, and CCI had no significant impact on the risk of severe complications.

Conclusion: Patients with TT had the highest risk of developing severe postoperative complications together with WHO. The study highlights the critical role of meticulous preoperative risk assessment and individualized surgical planning to optimize patients outcomes. In the presence of advanced TT patient preferences should be considered in a shared decision-making process. Optimizing surgical procedures, including preoperative and postoperative strategies are crucial.

AS-1.008

Patients with Renal Cell Carcinoma: A comparison of patient characteristics, treatment choice and recurrence rate between an early (2007-2013) and late period (2019-2022)

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Introduction: The incidence of renal cell carcinoma (RCC) is increasing. Simultaneously we shift towards more use of mini-invasive surgery (MIS). The aim of the study was to evaluate changes in patient characteristics and treatment choice over time, and potential changes in recurrence rates after radical treatment.

Method: All patients (n=830) treated with radical nephrectomy (NX) or partial nephrectomy (PN) for RCC at Haukeland University Hospital in the two periods 2007-2013 (early period, n=521) and 2019–2022 (late period, n=309) were included. Patient characteristics, treatment choice, complications using the Clavien Dindo score, and recurrence rates were retrieved from the patient records. Potential differences were analysed using the t-test and chi-square test.

Results: Median age (65 vs 68 years), body mass index (26.7 vs 27.6 kg/m2) and ASA score (proportion ASA 3+ 23% vs 31%) all increased from early to late period. The use of MIS (19% vs 61%) and PN (6% vs 34%) also increased. Operative time (197 vs 168 minutes), and intraoperative bleeding (424 vs 247 ml) decreased. Patients in the late group had shorter hospital stay (6.8 to 4.3 days), and less complications (27% vs 17%). All described differences were statistically significant with $p<0.05$. The recurrence rate was unchanged (10,4% vs 11,0%, p=0.8).

Conclusion: Older and more comorbid patients were treated for RCC in the late period, but in spite of this hospital stay and complications decreased substantially, probably due to an increased use of MIS. Recurrence rates, however, have remained unchanged.

AS-1.009

Small renal masses - a pilot study using ultrasound as screening tool.

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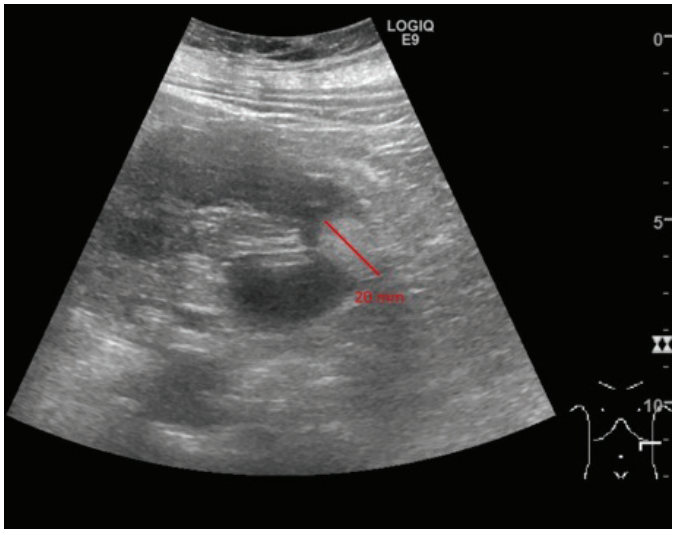
Introduction: Renal cancer is increasingly discovered incidentally due to its asymptomatic nature. Hypertension is one of the well-documented risk factors for renal cancer; therefore, selected patients with hypertension could be a potential target population for screening.This prospective study aims to evaluate the feasibility of ultrasound as a screening tool for detecting small renal masses and, thereby, potentially renal cancer in patients with hypertension.

Method: A prospective cross-sectional study was performed at Odense University Hospital, Denmark, with patients recruited through their general practitioners. The inclusion criteria were age ≥55 years and at least 5 years of treatment for primary hypertension. The patients were recruited from January 2025, and the study is expected to reach the estimated sample size of 200 by September 2025. Each patient underwent a renal ultrasound performed by a trained medical student under a radiologist's supervision. Data collected included demographic information, medical history, and ultrasound findings: renal measurements, cortical and medullary thickness, presence of cysts, nephropathy, or tumors. Suspicious lesions were referred for further evaluation according to national guidelines. The study was approved by the ethical committee (S-20230064) and the data protection agency.

Results: The preliminary results of 54 patients (mean age 70.1 years, 55.6% female) have been scanned. The mean time of primary hypertensive treatment was 12.6 years. Five renal lesions (9.26%) suspicious for renal cancer were found. One lesion, measuring 2.5 × 3 cm on ultrasound, was not identified on CT, while another 2 cm lesion was confirmed by CT, with biopsy awaiting. The remaining three lesions were 7 to 8 mm well-defined hyperechoic cortical lesions, which will be followed by imaging for potential growth.

Conclusion: The study appears to be feasible, it is fast to perform, requires no radiation, and preliminary results suggest that ultrasound has the potential for detecting small renal tumors in selected patients.



AS-1.010

Active surveillance in small renal masses - clinical outcomes in a seven years cohort

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Introduction: Active surveillance (AS) with repeated imaging is recommended for patients with small renal masses and competing risks. We aimed to look at outcomes for patients managed in AS at Haukeland University Hospital.

Method: From 01/2016 to 07/2024, as a part of a clinical audit,197 patients entered the active surveillance program. Data on the patients, tumors, imaging, biopsies and interventions were collected from the patient records.

Results: Patients were 74yrs (67-79)*, male:female ratio was 2:1, ASA score 3 in 38%, ECOG0 in 75%, CKD2 and CKD3 in 57% vs 25%. Intitial tumor size was 16 mm (13-20)* vs 20 mm (16-25)* at final images. Time on surveillance was 24 months (13-41)* and one third had ≥4 images. Biopsies performed in 49 patients revealed 31 RCC, 14 benign and 4 nondiagnostic. Seventeen patients were scheduled for active treatment after biopsy. Twenty patients had surgery without biopsy, 25% with benign histology, and the rest RCC (low-risk 60%, intermediate-risk 15%). AS was replaced with observation in 100 patients, in 76 patients without biopsy/intervention. No other characteristics than female gender and present CKD were related to fewer interventions($p<0.3$). Fifty-six patients are still in AS. As of January 2025, none of the patients had metastasized, but thirty-seven patients were dead, 35% from non-RCC-cancer and 56% from other causes.

Conclusion: In this cohort on AS, no patients metastasized or died from RCC. Most patients could leave AS, spared of treatment. Although the follow-up is short, AS and delayed intervention appear to be a safe practice.*Median (IQR)

AS-1.011

Risks for local recurrences and distance metastases after ablative therapy versus partial nephrectomy of renal cell carcinoma - a real-world competing risk analysis

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Introduction: We evaluated the occurrences of local recurrence (LR) and distant metastases (DM) and their overall mortality after ablative therapy (AT) versus partial nephrectomy (PN) in a real-world national population-based cohort of patients with nonmetastatic renal cell carcinoma (nmRCC).

Method: Data on 2751 AT and PN-treated tumours diagnosed between 2005 and 2018, representing 2701 unique patients, were extracted from the National Swedish Kidney Cancer Register. Time to LR/DMR or death with/without LR/DMR was analysed. Cox regression models were used for multivariate analysis.

Results: During a mean 4.8 years of follow-up, 111 (4.0%) LRs and 108 (3.9%) DMs were diagnosed. AT-treated tumours had 4.3 times higher risk of LR ($P < 0.001$) and 1.9 times higher risk of DM ($P = 0.018$) than PN-treated.After a mean of 3.2 and 2.5 years of follow-up after LR/DM respectively, 24 (21.6%) of the patients with LR and 56 (51.9%) of those with DM died, compared to 7.5% in patients with no LR and no DMR. There was no significant difference between AT-and PN-treated regarding risks of early death after occurrence of LR or DMR.

Conclusion: Patients with nmRCC, treated with AT, had significantly higher risks of LR (HR 4.3) and DMR (HR 1.9) than patients treated with PN. To minimize the risks of LR and DMR, PN is preferred over AT as primary treatment, implying the recommendation to perform AT mainly to frail and/or co-morbid patients. Patients with occurence of LR and DMR have a significant worser survival than those without recurrence.

AS-1.012

Healthcare costs in relation to increased use of preoperative renal tumour biopsies

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Introduction: We evaluated the budget impact of routine preoperative renal tumour biopsy (RTB) before surgical treatment in cT1 renal tumours in Sweden.

Method: This study used data from the National Swedish Kidney Cancer Register, including 4,109 surgically treated T1N0M0 renal tumours (2018-2022). We modelled a gradual increase in the proportion of preoperative RTBs from 15.6% at baseline to 90% of all T1 renal tumours.

Results: For cT1a tumours, increasing the proportion of preoperative RTBs to 90% reduced the net annual costs by €691,620, whilst for cT1b, costs increased by €67,630. Overall, an increase in preoperative RTBs to 90% of all patients with cT1 renal tumours was projected to reduce spending by €623,990 annually. Furthermore, 100 unnecessary surgeries/yearly will be avoided. Benefits for individual patients are not included in the economical calculation.

Conclusion: Routine preoperative RTB in cT1 renal tumours is associated with net cost savings, particularly in cT1a renal tumours. In addition, effects on patients' health need to be considered.

AS-2.013

A randomised clinical trial comparing two biopsy templates and follow-up schedules for men on active surveillance for low-risk prostate (SAMS)

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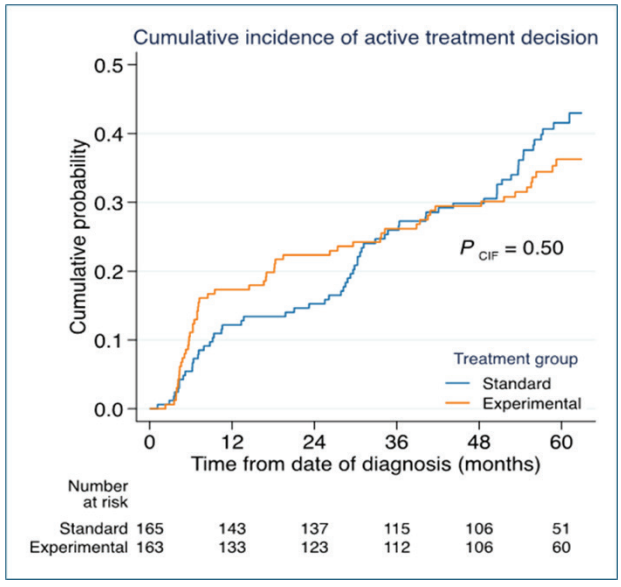
Introduction: Neither biopsy core number and location nor follow-up schedules for active surveillance of prostate cancer are based on randomised trials. We initiated one that compared two templates for confirmation biopsy and two follow-up schedules.

Method: Men with low-risk, low-volume prostate cancer were in 2012 to 2016 randomly allocated at 18 Swedish urology units to either a standard confirmatory systematic prostate biopsy (median 12 cores) and standard follow-up, or an extended confirmatory systematic biopsy, including 4-6 anterior cores (median a total of 19 cores), and less frequent follow-up without any scheduled repeat biopsy. The primary endpoint was the cumulative incidence of curative treatment within 5 years from diagnosis, with transition to watchful waiting and death as competing risks.

Results: The trial started when magnetic resonance imaging (MRI) was not used for active surveillance in Sweden. Inclusion was stopped when MRI was introduced, and 340 of the planned 500

men were included. Of 328 analyzable men, 42% in the standard and 36% in the experimental arm received treatment with curative intent within 5 years (p = 0.5). The Figure shows the cumulative incidence of a decision to start active treatment with the date of diagnosis as start of follow-up. Approximately 40% in both groups underwent MRI; the MRI changed the management of 13% of the men in the standard and of 17% in the experimental group. No distant metastasis or prostate cancer related death were recorded. Compliance with scheduled repeat biopsies decreased over time.

Conclusion: For men with low-risk prostate cancer on active surveillance without routine MRI, a standard confirmatory biopsy and standard surveillance resulted in a similar 5-year treatment rate as an extended confirmatory systematic biopsy and surveillance without further scheduled biopsies. The growing treatment gap between the two study arms supports concerns for long-term safety of omitting scheduled follow-up biopsies in surveillance without MRI.



AS-2.014

Low free testosterone index predict upgrading of ISUP Grade Group in prostatectomy specimen compared to preoperative biopsy

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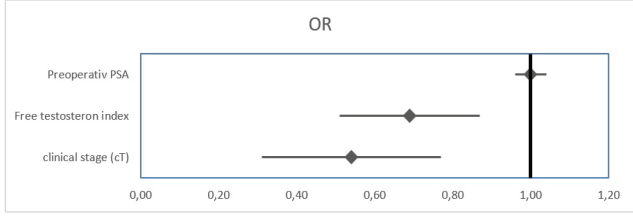
Introduction: To assess if free testosterone index (FTI) is associated with change of International Society of Urological Pathology (ISUP) Grade Group (GG) from biopsy to radical prostatectomy specimen.

Method: Included in the study are patients operated with robot assisted laparoscopic radical prostatectomy (RALP) during 2011-2012. Total testosterone (T) and sex hormone binding globuline (SHBG) were routinely measured preoperatively. FTI was calculated according to the formula T x 10/SHBG. Multivariate logistic regression analyses estimated association between hormone values and change of ISUP GG between biopsy and RALP specimen.

Results: 380 patients took part in the study. Mean serum concentration of T was 14.3 nmol/L (SD 5.3), reference values 4.6–24 nmol/L. Mean FTI was 3.6 (SD 1.1), reference values 1.7 – 6.1. Fifty-seven patients (15%) had ISUP GG upgraded from ≤ 2 in biopsy to > 2 in RALP specimen.Low FTI index was statistically significant associated with upgrading of ISUP GG 1-2 in preoperative biopsy to ISUP GG > 2 in the RALP specimen (p=0.02) (Fig 1). No such association was found for total T.

Conclusion: Low FTI was statistical significant associated with upgrading of ISUP GG 1-2 in preoperative biopsy to ISUP GG > 2 in the RALP specimen. FTI may be a potential biomarker, which may influence the decision of scheduling men on active surveillance.

Figure 1: Multivariate logistic regression. Association between ISUP GG upgrading and FTI



AS-2.015

Transperineal MR-targeted biopsies and cancer detection. Determining the optimal number of per lesional biopsy cores

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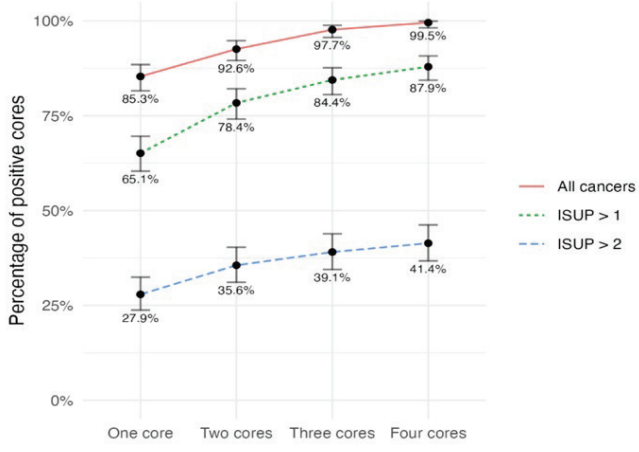
Introduction: Prostate biopsies are performed routinely in the urological practice, and approximately 5000 procedures are performed in Denmark every year. Magnetic resonanace imaging (MRI) of the prostate enables accurate targeting of cancer suspect lesions, increases cancer detection and aids in selecting patients for biopsy. Furthermore, the transperineal (TP) biopsy route, has improved our work out and allowed to reduce complications rate, use of antibiotics and increased accuracy. Current guidelines recommend taking 2-4 cores from each suspected lesion on MRI. In this study, we assessed the optimal number of cores needed to detect significant prostate cancer (PCA).

Method: We prospectively included 430 patient between Januar 2022 and Oktober 2023. Written informed consent was obtained

prior to inclusion. Only patients with a single MRI lesion were included. Four targeted cores under local anaesthesia were taken from each patient. Biopsies were performed using freehand technique and the BK Medical software fusion platform. We assessed the pathology report of each biopsy and recorded the results for every individual core. Afterwards the percentage of positive cancer was calculated for all cancers, International Society of Urological Pathology (ISUP) above 1 and ISUP above 2 after one, two, three and four cores. Subsequently we sorted the cores from "negative/inconclusive" to "positive" to compare hypothetic worst-case scenario to real-life outcome.

Results: For all PCAs the detection rate was 85.3%, 92.6%, 97.7% and 99.5% after one core, two cores, three cores and four cores respectively. For ISUP grade above the detection rate was 65.1%, 78.4%, 84.4% and 87.9%.

Conclusion: r data suggest that 4 cores per lesion is optimal. Every added biopsy core contributed to a meaningful increase in PCA detection.



AS-2.016

Utilizing Cyclic Immunofluorescence to Detect Spatial Differentiation in Prostate Cancer

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Introduction: Prostate cancer (PCa) is the most common cancer in Finland. Its incidence is rising due to an aging population, which is placing a burden on the healthcare system. Androgen deprivation therapy (ADT) is a foundational treatment for advanced and metastatic PCa. However, it is not curative and eventually leads to the development of castration-resistant prostate cancer (CRPC). Evidence suggests that cholesterol-lowering drugs, such as statins (e.g., atorvastatin), may slow PCa progression. Atorvastatin inhibits cholesterol synthesis by competitively blocking the enzyme HMGCR, whose expression is upregulated in PCa, thereby promoting cancer cell growth and migration.We examined the spatial differentiation of the tumour and tumour microenvironment in PCa patients treated with either atorvastatin or placebo.

Method: Prostate tissue slides used in this study were collected at prostatectomy within the clinical trial "Atorvastatin Versus Placebo for Prostate Cancer Before Radical Prostatectomy—A Randomized, Double-Blind, Placebo-Controlled Clinical Trial" by Murtola et.al. (2018).24 samples were selected for this study by calculating the Gleason score and analysing the inflammation based on H&E staining. Of these, 13 samples were from patients treated with atorvastatin, and 11 were from patients treated with placebo. One placebo-arm sample detached from the slide and was therefore excluded.Slides were stained with indirect IF staining. In total there were 11 staining rounds with two antibodies every round. All primary antibodies were incubated at 4°C in humid chamber overnight (12-24h). Secondary antibodies (AlexaFluor anti-rabbit 647, and AlexaFluor anti-mouse 750) were incubated for one hour at room temperature. Slides were scanned with Olympus VS200 slide scanner with 20x magnification (Figure). Exposure time was manually adjusted every channel: DAPI 4ms, Cy5 100ms, and Cy7 80-100ms.

Results: Image analysis is underway. Samples from atorvastatin-treated men indicated less inflammation compared to placebo samples.

Conclusion: We demonstrate utility of multiplex immunohistological staining in evaluating microenvironemnt of prostate cancer tissue slides

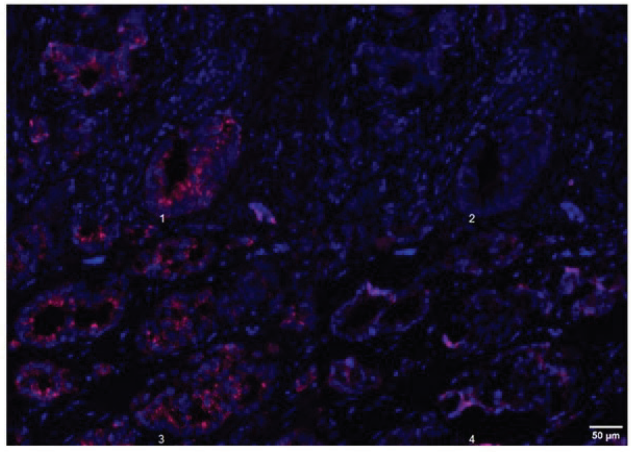

Figure. Prostate cancer tissue stained with AMACR and Adipophilin antibody markers. DAPI (blue), image 1 AMACR (red), image 2 Adipophilin (red), image 3 AMACR (red) and image 4 Adipophilin (red). ***Images 1 and 2*** *represent* ***atorvastatin samples*** *(Gleason score: 9(4+5), atorvastatin in use: 21 days).* ***Images 3 and 4*** *represent* ***placebo samples*** *(Gleason score: 9(4+5), placebo in use: 21 days)*

AS-2.017

Association between prostate lipidome and prostate volume in men with localized prostate cancer

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Introduction: Lipid metabolism is important in prostate cancer (PCa). However, it is not clear whether it is connected to prostate size. Therefore, this study aims to look for a possible association between prostate lipidome and prostate volume in PCa patients.

Method: The study cohort is based on 158 men with localized PCa who participated in ESTO1 trial. In ESTO1 the participants were randomized to either 80 mg atorvastatin or placebo for a median of 21 days before prostatectomy, where fresh tissue samples were collected. Liquid chromatography high-resolution mass spectrometry (LC-MS/MS) was performed to determine lipid profile in prostate tissue. Prostate size was estimated from the removed prostate. This analysis was limited to 61 men who had both prostate size and intraprostatic lipidome available.Study population was stratified into tertiles based on prostate size. We compared intraprostatic lipidome profile between the tertiles both overall and separately for atorvastatin and placebo groups.

Results: Intraprostatic lipidome differed systematically between the study tertiles; in largest prostate the lipidomic values were lowest compared to other two tertiles (Figure). Intraprostatic lipidome also differs between atorvastatin and placebo groups.

Conclusion: Lipidome profile is connected to prostate size in men with PCa. Although the change is not in linear association with prostate size. This supports the idea that specific lipids could be a risk factor for benign prostate hyperplasia. Our results should be confirmed in men with clinically diagnosed prostate hyperplasia to confirm these results.

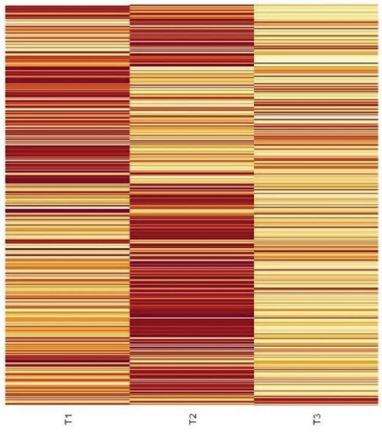

Figure. Prostate lipidomic profile across the tertiles of prostate volume.

AS-2.018

Prostate spesific membrane antigen single-photon emission computed tomography is promising in local lymph node detection in subjects with newly identified, high risk prostate cancer

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Introduction: Accurate staging at diagnosis is vital in prostate cancer management. PSMA-PET/CT has superior sensitivity for detecting metastases compared to bone scintigraphy and contrast-enhanced CT. Due to limited access to PSMA-PET/CT, this study aims to prospectively assess the diagnostic performance of the novel PSMA-targeted 99mTc-MIP-1404 SPECT against conventional imaging in primary staging.

Method: PROSTAMIP is a Phase III trial at Turku University Hospital (EUDRA-CT 2021-000486-33; NCT06219746) aimed at comparing the efficacy of 99mTc-MIP-1404 SPECT/CT (PSMA arm) and CE-CT (control arm) in detecting local lymph node metastasis in high-risk prostate cancer patients (Gleason ≥4+4, PSA ≥20 and/or cT≥3a). Based on the expected metastasis rates of 9% for the control group and 20% for the PSMA group (a two-sided alpha of 0.05, a beta of 0.20, a 5% dropout rate), a total of 320 participants will be randomly assigned in a 1:1 ratio between the two groups.

Results: Here we report the results of pre-planned interim analysis. The first 100 subjects presented with a mean (standard deviation, SD) age of 71(8) and a median (interquartile range, IQR) PSA of 14(29). Majority presented with an ISUP grade group 4 or 5 cancer; 22(22%), 56(56%), respectively, and clinical T3-stage or higher cancer; 54(54%). In control arm, CE-CT detected 20 local lymph node metastasis with a median (IQR) diameter of 12(10-13)mm in 10(20%) subjects, whereas in the PSMA-arm, 99mTc-MIP-1404 SPECT/CT detected 48 local lymph node metastasis with a median (IQR) diameter of 8.0(6.0-11)mm in 20(40%) subjects.

Conclusion: Interim results indicate that 99mTc-MIP-1404 SPECT/CT detects more local lymph node metastases than CE-CT, even when the short diameter is less than 8 mm.

AS-2.019

Predictors for postoperative additional treatment in patients with lymph node metastasis (pN1)

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Surgery. [2]University of Oslo, Institute of Clinical Medicine. [3]Oslo University Hospital, Institute for Cancer Research, Department of Tumor Biology

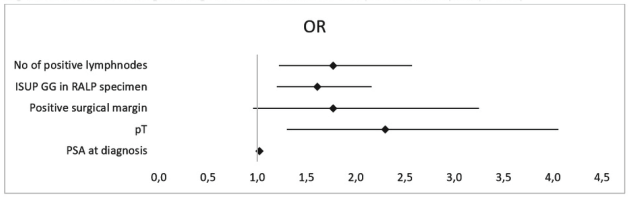
Introduction: The optimal postoperative management of prostate cancer (PCa) patients with nodal metastasis at the time of radical prostatectomy remains unclear. Several studies investigating this subpopulation report the practice of routine adjuvant androgen deprivation therpay (ADT), but this has not been common practice at our institution. We sought to assess predictors for initiating additional postoperative treatment (APT) in pN1 patients. APT is usually initiated when there is persistent PSA after radical prostatectomy or when biochemical recurrence occurs.

Method: APT was defined as adjuvant/salvage radiation therapy (RT), permanent ADT or postoperative metastatic surgery. If multiple modalities of ATP were given, the first ATP to occur was registered in the analysis. The study included 268 patients who underwent RALP and ePLND and were diagnosed with pN1 in the histology assessement. Multivariable logistic regression analysis for the start of ATP was performed.

Results: Median follow-up (FU) was 56 months (IQR 37, 86). At the end of FU, 78 patients (29%) were still without APT. The forest plot demonstrating odds ratios (OR) for the covariates are shown in Figure 1.

Conclusion: At end of study, 29% of pN1 patients were still without APT. Number of positive lymphnodes, ISUP GG in RALP specimen and pT were the strongest predictors for start of APT.

Figure 1: Multivariate logistic regression for start of APT in patients with pN1 (n=268)



AS-2.020

The Impact of Positive Surgical Margin after RALP on Oncological Outcome

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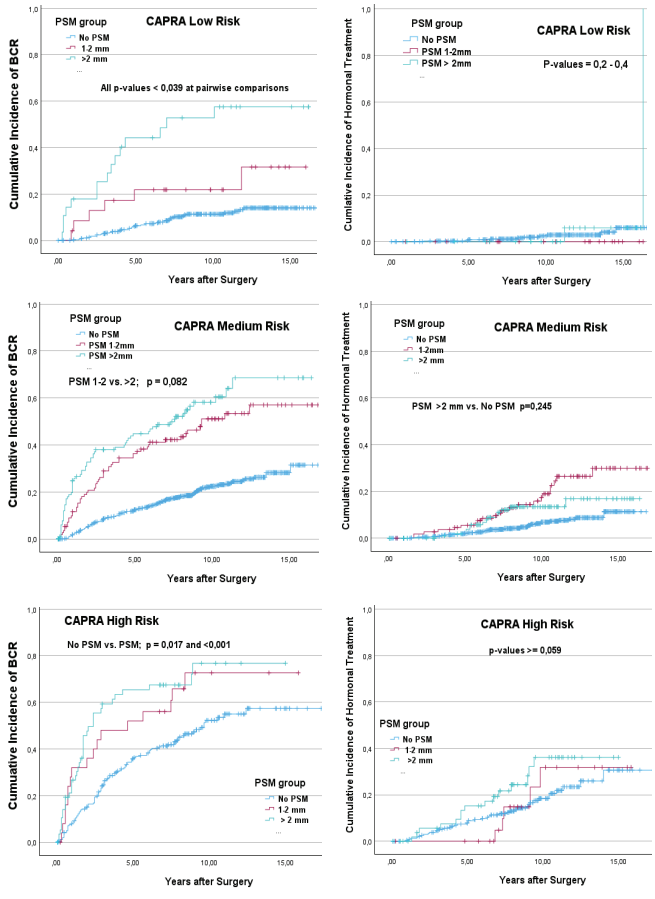
Introduction: A positive surgical margin (PSM) after robot-assisted laparoscopic radical prostatectomy (RALP) is considered unfavorable. In this study we explored to what extent the effect of PSM might vary depending on CAPRA score, which is a measure of preoperative risk.

Method: A total of 2080 patients operated from April 2006 to December 2015 and included into our institutional prostatectomy registry were studied. We excluded patients with PSA persistence and postoperative PSA nadir >= 0.2 (224), cN1 (38), pN1 (58), salvage RALP (5) and lack og follow-up data (4), resulting in 1807 patients. CAPRA stratified patients into low risk (score 0-2, n=435), medium risk (score 3-5, n=1030) and high risk (score 6-10, n=329). Biochemical recurrence (BCR) was defined as two consecutive PSA values >=0.2 or additional therapy, predominantly salvage radio therapy, with or without six months of adjuvant hormonal therapy, whereas the outcome "hormonal treatment" was permanent hormonal treament.

Results: 372 patients (20,6%) had PSM, being associated with an increased risk of BCR. However, PSM did not result in a consistent statistically significant change in the risk of permanent hormonal treatment (see Kaplan-Meier plot).

Conclusion: On BCR the impact of PSM was substantial, but on the outcome "permanent hormonal tretment " it was modest.



AS-2.021

Patient- and procedure-specific risk factors for urinary incontinence after Robot Assisted Radical Prostatectomy. A Nationwide, population-based study.

Katarina Koss Modig[1,2], Rebecka Arnsrud Godtman[1,2],

Stefan Carlsson[3,4], Pär Stattin[5], Johan Styrke[6], Johan Stranne[1,2]

[1]Department of Urology, Institute of Clinical Science, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden. [2]Region Västra Götaland, Sahlgrenska University Hospital, Department of Urology, Gothenburg, Sweden. [3]Department of Molecular Medicine and Surgery (MMK), Karolinska Institutet, Stockholm, Sweden. [4]Division of Urology, Karolinska University Hospital, Stockholm, Sweden. [5]Department of Surgical Sciences, Uppsala University, Uppsala, Sweden. [6]Department of Diagnostics and Intervention, Urology and Andrology, Umeå University, Umeå, Sweden.

Introduction: Post-prostatectomy urinary incontinence (PPI) is a common complication following Robot-assisted laparoscopic radical prostatectomy (RALP), with incidence rates of 4% -31%. This study examines associations between patient- and surgery-specific risk factors and PPI.

Method: We analysed data from 13,754 men who underwent RALP between 2017 and 2021, registered in the National Prostate Cancer Register of Sweden (NPCR). Electronic Patient-Reported Outcome Measures (ePROMs) were completed by 37% at 3 months and 47% after 12 months, including questions on pad use. PPI was defined as use of >1 pad (primary) and any pad use (secondary). Poisson regression assessed associations between PPI and factors such as age, comorbidity, prostate volume, nerve-sparing procedures, and surgical details.

Results: At 12 months, 17% (1086/6413) reported using >1 pad, and 49% (3113/6413) reported any pad use. Significant risk factors for incontinence in multivariable analysis (>1 pad) included age ≥75 years vs. <65 years p <0.001 (RR 2.03; 95% CI 1.67-2.48), urethral division with margin from the apex vs. maximal urethra length p <0.001 (RR 1.95; 95% CI 1.57-2.43), non-nerve-sparing procedures p <0.001 (RR 1.70; 95% CI 1.43-2.03), and prostate volume ≥90 ml vs. <30 ml, p = 0.018 (RR 1.47; 95% CI 1.07-2.01).

Conclusion: Older age, large prostate size, and non-nerve-sparing surgery increase the risk of PPI, underscoring the importance of shared decision-making in treatment planning. Further research is required to identify additional predictive factors.

AS-2.022

The use and effect of sexual aids for erectile dysfunction after radical prostatectomy in Sweden - sexual health in the LAPPRO trial.

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Introduction: Erectile dysfunction is a common consequence of radical prostatectomy, significantly impacting patients´ quality of life. Sexual aids, including phosphodiesterase type 5 inhibitors (PDE5is), intracavernosal injections, and vacuum pumps, are important for rehabilitation. Long-term use and effectiveness of sexual aids are poorly described. This study evaluated sexual aid utilization and effectiveness in men undergoing radical prostatectomy, focusing on age-related differences and nerve-sparing surgery.

Method: Data were obtained from the LAPPRO trial, a Swedish multicenter prospective cohort study of 4003 men undergoing robotic-assisted laparoscopic prostatectomy or open retropubic prostatectomy. Patients were stratified by age (≤60, 60–64, ≥65 years) and degree of nerve sparing (none, partial, complete). Primary outcomes were use and effects of sexual aids over time. Odds ratios (OR) with 95% confidence intervals were calculated for comparisons at [1,2], and 8 years postoperatively.

Results: PDE5is were the most used sexual aids, with stable use over time. Younger patients (≤60 years) were significantly more likely to experience beneficial effects compared to older men (≥65 years), with ORs of 2.38–6.68 (p<0.01). Nerve-sparing surgery increased the likelihood of successful use of sexual aids, particularly among patients with complete nerve sparing (p<0.01). Sexual aids usage declined over time, particularly in older patients.

Conclusion: Sexual aids are essential for recovery of erectile function after radical prostatectomy, with effectiveness influenced by age and nerve preservation. Younger men and those with nerve-sparing surgery benefited the most. Sildenafil remained the most used aid but was not always effective, emphasizing the need for personalized treatment strategies and ongoing patient counseling.

AS-2.023

SPRINTR – Swedish PRostate cancer Initiative for Novel Treatment Regimens Biomarker driven precision medicine

Andreas Josefsson[1,2], Anders Bjartell[3], Johan Stranne[2], Olof Akre[4], Martin Holmbom[5], Sabina Davidsson[6], Pernilla Wikström[1], Joakim Lundeberg[7], Martin Sjöström[3], Carolina Wählby[8], Mats Ahlberg[8], Henrik Ugge[6], Caroline Stenman[2], Katrine Riklund[1], Tobias Nordström[4], Sara Strandberg[1], Elin Trägårdh[3], Per Fransson[1], Marene Landström[1], Camilla Thellenberg[1], Karin Welén[2]

[1]Umeå University. [2]University of Gothenburg. [3]Lund University. [4]Karolinska Institute. [5]Linköping University. [6]Örebro University. [7]Royal Institute of Technology (KTH). [8]Uppsala University.

Introduction: Approximately half of all prostate cancer-related deaths occur in men with non-metastatic disease at the time of diagnosis, a group that has a relatively good chance of a cure. Therefore, improving treatment for high-risk prostate cancer patients at this stage has the potential to save many lives. The aim of SPRINTR is to identify biomarkers that can help select patients for whom current treatment is insufficient and to evaluate matched therapies in a platform study for clinical trials.A key challenge for

clinical drug trials in Sweden is the combination of a relatively small population and inefficient recruitment processes, coupled with time-consuming administrative procedures. In the initial phase of SPRINTR, the SPRINTR-real initiative is being established to integrate study invitations and molecular tissue characterization into the diagnostic workflow for all men undergoing biopsy due to suspected prostate cancer.

Method: SPRINTR-real form a novel concept of a national study framework for the inclusion of all men with prostate cancer, linked to a national platform, automated follow-up via national registries, feeding into a study database. Participants consent to: (1) the use of molecular data from their tissue samples in biomarker studies, (2) the use of their personal identification numbers for health-related data retrieval from the National Board of Health and Welfare and Statistics Sweden, and (3) potential matching and invitations to future studies based on the collected data.

Results: For the high-risk patient group, the workflow will include RNA expression profiling of tumor-containing biopsies, analysis of cancer-related mutations (GMS560), and AI-based image analysis. These data can be put together to create an optimized biomarker panel, or "classifiers," which will serve as tools in biomarker-guided randomization for upcoming studies within the SPRINTR-trial platform

Conclusion: The overall objective of this project is to increase survival and quality of life for PC patients in Sweden (www.sprintr.se).

AS-2.024

Primary Localized Prostate Cancer Treatment with Robotic Five-Fraction Ultra-Hypofractionated Radiotherapy: A Single-Center Experience

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Introduction: Prostate cancer is one of the most frequently diagnosed cancer in Baltic countries and Northern Europe. Advances in radiotherapy over the last decades have enabled prostate radiotherapy in few fractions. Here, we present our nine-year experience with five-fraction ultra-hypofractionated radiotherapy (SBRT) using the CyberKnife robotic treatment system.

Method: 299 patients were stratified into risk groups (RG) according to NCCN classification. Patients' age was 43-88 years, median 63 (interquartile range [IQR] 61–70). 158 patients (52.8%) received treatment over five consecutive days, 67 (22.4%) every other day, and the remaining 74 (24.8%) had other schedules (6–19 days). Biochemical relapse (BCR) was defined according to the Phoenix criteria (PSA nadir + 2 ng/mL). In the intermediate RG, 27 patients received androgen deprivation therapy (ADT), and in the high- and very-high RG, 28 patients received ADT of various durations. Follow-up ranged from 6 to 100.8 months, median 29.9 (IQR 14.95–52.7).

Results: In very-low risk (n=23) and low-risk (n=27) RG one BCR was observed 42.1 months after treatment. In intermediate favorable RG (n=69) four BCR were observed at 6.3, 10.2, 11.3, 26.8 months. In intermediate unfavorable-risk RG (n=118) five BCR occurred at 10.8, 11.3, 20.4, 33.6, and 40.1 months. In the high RG (n=40) seven biochemical relapses occurred at 13.3, 14.1, 15, 15.2, 29.3, 58.5, and 70.9 months. In the very-high RG (n=22) four biochemical relapses occurred at 6.8, 13.6, 17.5, and 34.2 months. ADT deferred BCR in the

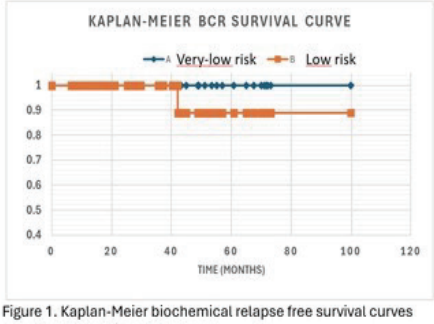


Figure 1. Kaplan-Meier biochemical relapse free survival curves very-low risk and low-risk groups

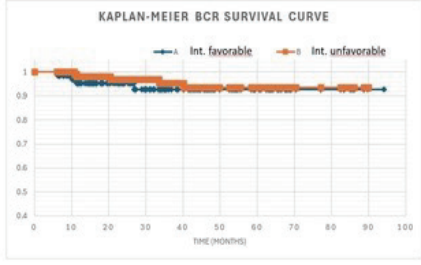


Figure 2. Kaplan-Meier biochemical relapse free survival curves intermediate favorable and intermediate unfavorable risk groups

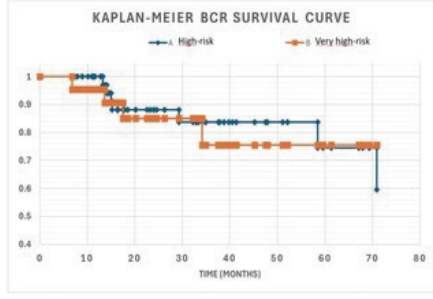


Figure 3. Kaplan-Meier biochemical relapse free survival curves high-risk and very-high risk groups

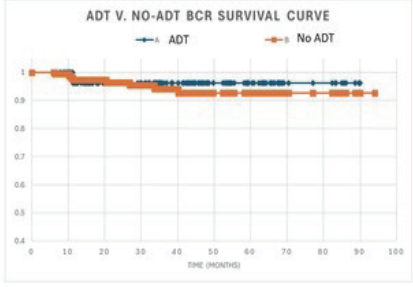
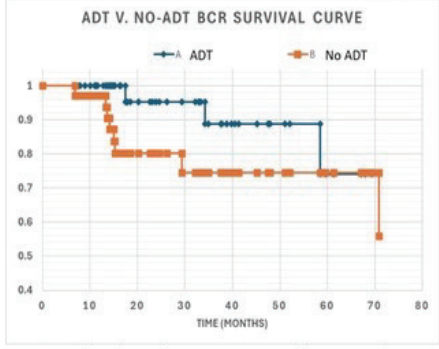
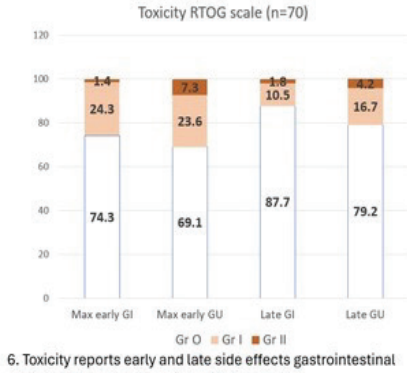


Figure 4. Kaplan-Meier biochemical relapse free survival curves intermediate risk group: ADT v. no-ADT



5. Kaplan-Meier biochemical relapse free survival curves high- and very-high risk group: ADT v. no-ADT



6. Toxicity reports early and late side effects gastrointestinal domain (GI) and genito-urinary (GU) domain

high- and very-high RG, whereas in the intermediate RG the difference was minor. We observed only Grade 0-2 early and late genitourinary and gastrointestinal side effects.

Conclusion: Overall, five-fraction robotic ultra-hypofractionated radiotherapy offers excellent biochemical control for primary localized prostate cancer with minimal toxicity. ADT reduced the risk of BCR in the high- and very-high RG, while in the intermediate RG, the reduction in risk was minimal.

AS-2.025

MRI findings in men who were screening positive in the first and the second screening round of the randomized ProScreen prostate cancer screening trial

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Introduction: ProScreen randomized prostate cancer (PCa) screening trial is designed to evaluate if three-tiered screening algorithm incorporating PSA, 4K, and MRI can reduce PCa mortality while minimizing overdetection. The second screening round's MRI findings are unknown.

Method: ProScreen trial randomized 61,193 men into screening group or a control group without screening. Men randomized to screening and with PSA levels ≥3.0 ng/mL had a 4K test. Men with a 4K score ≥7.5% underwent prostate MRI. Men with PIRADS 3-5 had targeted biopsies only. Here, we evaluate the demographics of the second-round MRI findings in men who were screen-positive in the first screening round (PSA ≥3.0 ng/mL and 4K score ≥7.5%) but benign biopsy results.

Results: In the first screening round, 526 men were screen-positive, i.e., PSA ≥3.0 ng/mL and 4K score ≥7.5%. Of these, 509 (97%) underwent MRI, with 256, 61 and 146 receiving PI-RADS scores of 0-2, 3, and 4-5, respectively, at the time of analysis. Altogether, 365 screen positive men did not have cancer and continued to the second screening round after two years. In the second round, 170 (47%) were screen-positive and underwent MRI, with 130 (76%), 25 (15%), and 15 (9%) receiving PI-RADS scores of 0-2, 3, and 4-5, respectively. Among men with negative MRI in the first screening round, 80% still had negative MRI in the second screening round, while 1 in 5 progressed to positive MRI. 50% of men with high suspicion of csPCa on MRI in first screening round, but with benign biopsy results, had negative MRI in the second screening round after two years.

Conclusion: Decision on whom to rescreen and when remains undetermined in contemporary MRI-based screening trials. Improved prognostic and predictive tools are needed to optimize screening protocols. Biopsy data are inconclusive as many men have not yet completed the planned biopsy or pathology evaluation.

		Second round screening						
First round	PIRADS	n	biopsy (n)	benign	GG1	GG2-5	GG NA	
PIRADS 0-2	0-2	109 (80%)	10	7	0	1	2	SBx (PSA-D ≥ 0.15)
	3	19 (14%)	19	9	7	2	1	TBx
	4-5	8 (6%)	8	3	0	5	0	TBx
PIRADS 3	0-2	13 (72%)	1	1	0	0	0	SBx (PSA-D ≥ 0.15)
	3	2 (11%)	2	1	1	0	0	TBx
	4-5	3 (17%)	3	0	1	2	0	TBx
PIRADS 4-5	0-2	8 (50%)	1	0	0	1	0	SBx (PSA-D ≥ 0.15)
	3	4 (25%)	4	4	0	0	0	TBx
	4-5	4 (25%)	4	0	3	1	0	TBx

Table 1. Cross tabulation of the MRI and biopsy findings in the first and the second screening rounds. Men were screen positive (and biopsy negative) in the first screening round. SBx = systematic 12-core biopsy (for PIRADS 0-2 but PSA-D ≥ 0.15). TBx = targeted biopsy only.

AS-2.026

How to improve prostate cancer screening?

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Introduction: Modern prostate cancer screening involves MRI and targeted biopsies, but several aspects still need evaluation, including PSA cutoff, reflex tests, PI-RADS cutoff, and safety measures for screen-negative men. We evaluated which modifications to the screening algorithm of the ProScree trial would reduce harms and costs with minimal loss of sensitivity.

Method: We randomised 61,193 men aged 50-63 years to screening or control arm using randomisation prior to consent (Zelen design). Of them, 15,299 were allocated to screening and invited, with 7744 (51%) participating. The cut-off for PSA was 3.0 ng/ml, for 4Kscore 7.5% and for MRI PI-RADS 3. Only targeted biopsies were used, except MRI-negative men with PSA density ≥0.15 underwent systematic biopsies.

Results: Using a PSA cutoff of 4 ng/ml for ages 60+ would have avoided 15% of the biopsies, with 8% of the GG 2-5 cases missed.

Including prior biopsy in the 4Kscore risk algorithm would have reduced biopsies by 6%, with 4% of GG 2-5 cancers missed. Treating PI-RADS score 3 as normal would have eliminated 24% of the biopsies and missed 12.5% of GG 2-5 cancers. Using only targeted biopsies and ignoring PSAD would have averted 15.5% of the biopsies and missed 12% of the GG 2-5 cases. Avoiding biopsies in men with low PSAD (<0.10 or <0.075) would have prevented 12-24% of the biopsies with 13% or 7% GG2-5 cases missed, respectively. The most effective approaches for reducing detection of GG1 cases would be to avoid biopsies in men with PIRADS 3 (24% reduction or based on PSAD (20% reduction).

Conclusion: To reduce costs and unnecessary biopsies, eliminating PI-RADS 3 and PSA density as biopsy indications appears to be a suitable approach, though this would also result in missing 12% of GG 2-5 cases.

AS-2.027

Changes in PSA and 4Kscore from the first to the second round of ProScreen screening trial

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Introduction: Data on repeat screening rounds remain scarce.

Method: We compared changes in PSA and 4Kscore between the two initial screening rounds of the ProScreen trial.

Results: Mean PSA among men who had attended both screening rounds was 3.22 ng/ml at first screen and 3.68 ng/ml at second screen, with an average increase 0.47 ng/ml and median increase of 0.40 ng/ml. In men with initial PSA <3 ng/ml, PSA increased on average by 0.70 ng/ml, from 2.02 to 2.72 ng/ml. Among men with initial PSA ≥3 ng/ml, mean PSA increase was 0.14 ng/ml, from 4.84 to 4.99 ng/ml. Of 660 men with initial PSA <3 ng/ml, 220 (33%) had second-round PSA ≥3 ng/ml. Correspondingly, of 484 men with first round PSA ≥3 ng/ml (and no cancer), 106 (21%) had PSA <3 ng/ml at second screen. 4K was measured only in men with PSA ≥3 ng/ml. The 4Kscore increased on average by 6.5 percentage points, from 14% to 21%. Of 234 men with positive (≥7.5%) 4Kscore at first round, 90% still had positive result at second round. A substantial proportion (59%) of men with initial PSA ≥3 but negative 4Kscore initially transitioned to positive 4Kscore at second round.

Conclusion: Changes in PSA levels in repeat screening are common to both directions, with some men moving from below to above 3 ng/ml and others from above to below it. The kallikrein panel remained positive in large majority of men, and an increase to above the 7.5% cutpoint was also frequent. Men with positive kallikrein panel were more likely to remain positive in second round compared to those who were PSA-positive (90% vs. 78%). However, these results are based primarily on men with PSA of 3 ng/ml or higher who were re-screened after two years. More stable findings <re expected in men with baseline PSA <1.5 ng/ml.

AS-2.028

Safety, Efficacy, and Quality of Life Outcomes of MRI-Guided Transurethral Ultrasound Ablation for Localized Prostate Cancer: 12-Month Results

Eemil Yli-Pietilä[1], **Otto Ettala**[1], Pietari Mäkelä[2], Pertti Nurminen[1], Heikki Pärssinen[2], Teija Sainio[2], Pekka Taimen[3], Roberto Blanco Sequieros[2], Peter Boström[1], Mikael Anttinen[1]

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Introduction: MRI-guided transurethral ultrasound ablation (TULSA) represents an emerging, minimally invasive therapeutic approach for localized prostate cancer (PCa). This study aimed to evaluate the safety profile, clinical efficacy, and functional outcomes associated with TULSA in patients with organ-confined PCa.

Method: In this prospective, single-center, phase 2 study (NCT03350529), men with MRI-visible, biopsy-confirmed clinically significant PCa (CsPCa: high-volume ISUP 1 [>2 positive cores or ≥50% cancer per core] or ≥ISUP 2) were enrolled.

Participants underwent whole-gland or focal TULSA based on disease characteristics and preference. Adverse events (AEs, Clavien-Dindo), PSA, uroflowmetry, and quality of life (QoL; EPIC-26, IIEF-5) were recorded at 3-month intervals up to 12 months. mp-MRI was performed at 6 and 12 months; systematic, in-field, and targeted biopsies at 12 months.

Results: Sixty patients were enrolled (median age 67 years [61–72], PSA 6.9 ng/ml [4.5–9.7]); 15 (25%) received whole-gland TULSA. There were 35 Grade 2 AEs (e.g., UTIs) and 3 Grade 3 events (urinary obstructions); no Grade ≥4 events. Four patients required re-TULSA before 12 months. Median sonication was 42 minutes, hospitalization 24 hours, catheterization 14 days.Fifty-nine patients completed follow-up. In-field CsPCa was cleared in 37/53 (70%); 8/53 (15%) had out-field CsPCa. PSA declined to 1.25 ng/ml [0.63–2.20]. mp-MRI showed no residual disease in 48/56 (86%). Uroflowmetry remained stable; post-void residual improved from 52 ml to 25 ml. Erectile function loss occurred in 6 patients. EPIC-26 urinary/bowel scores remained stable; sexual scores declined from 67 to 57.

Conclusion: TULSA demonstrates promising efficacy with favorable functional outcomes and minimal QoL impact in organ-confined CsPCa.

AS-2.029

Early and intermediate-term oncological and functional results of focal HIFU treatment of localized prostate cancer

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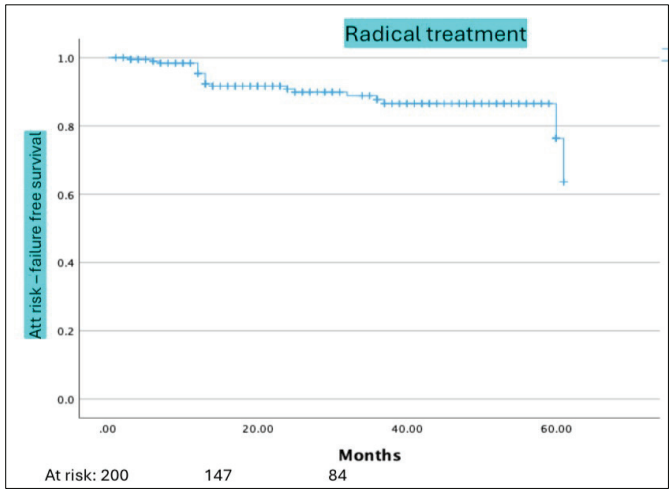
Introduction: Focal treatment of localized prostate cancer (PCa) with High-Intensity Focused Ultrasound (HIFU) has gained increasing acceptance as a curative treatment option. Early and intermediate-term oncological and functional results are evaluated.

Method: 201 men, mean age 64 years, underwent focal HIFU treatment from February 2020 and onwards. Inclusion criteria: Intermediate risk PCa, >10 years life expectancy, with unilateral T1c-T2a tumor at MRI. Some high-risk cases in frail subjects were also included. Patients were followed by PSA every 3-6 months, an early post-treatment MRI, a new MRI after one year and after 3 years. Fusion-guided targeted and systematic biopsies were done after 1 year and later if PSA rise or progression on MRI was found. Patients with significant residual or recurrent tumor underwent salvage RALP and later also salvage RT or re-HIFU. IPSS and IIEF scores were obtained at baseline and regularly during the follow-up period.

Results: After 1 year follow-up, 17/147 (12%) patients underwent salvage RALP and two salvage HIFU. After 3 years, another 5/84 (6%) underwent salvage whole-organ treatment and another 4 re-HIFU. After 12 months only 5% of patients had increased urinary problems compared to baseline, none needed pads. 9% of patients had slight worsening of IIEF scores as compared to baseline.

Conclusion: Focal HIFU offers oncological results after 1 and 3 years of follow-up, comparable to RALP or RT. Side effects are minimal in comparison. Initially, all patients with significant tumor at follow-up had RALP, but after modified ethical approval, an increasing proportion undergo re-HIFU.



AS-2.030

Castration-resistant Prostate Cancer (CRPC) in Clinical Practice and Its Relation to Definitions used in Guidelines

Tiago Bonde[1], Hans Garmo[2], Andri Orrason[2], Pär Stattin[2], David Robinson[3]
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Introduction: The aim of this study was to assess how various CRPC definitions affect CRPC date and to what extent they impact initiation of CRPC treatment.

Method: Data on prostate cancer (Pca) characteristics was retrieved from the National Prostate Cancer Register (NPCR) of Sweden for men in the Region Jönköping treated with gonadotropin-releasing hormone (GnRH) agonists between 2012 and 2024. Data on serum levels of PSA and testosterone, radiology reports, and CRPC treatment dates were retrieved from hospital databases and health care records. Due to infrequent measurement of testosterone in clinical practice, both original CRPC definitions and modified versions that did not require testosterone measurements were applied. Cumulative incidence was calculated for each CRPC definition, start of treatment, and event that triggered treatment and imaging.

Results: Strict CRPC definitions, such as the EAU criteria, classified fewer men as CRPC (30% with requirement for measurement of testosterone, 50% without) compared to the Swedish guidelines (40% with testosterone, 70% without) or the PSA-only definition (90%). The proportion of men treated within one year from the fulfillment of CRPC criteria was highest for the EAU criteria (80%), followed by the Swedish guidelines (60%) and lowest for the PSA-only definition (40%). Imaging progression was the most common trigger for treatment (40% probability). PSA progression preceded imaging assessments in more than 50% of imaging events.

Conclusion: The application of varying CRPC definitions leads to differences in diagnosis and treatment timing, with clinicians often relying on a combination of clinical factors rather than strict adherence to one definition.

AS-2.031

Improving Biochemical Recurrence-Free Survival Prediction in Prostate Cancer: The Added Value of Prostatype P-Score Over NCCN Risk Groups

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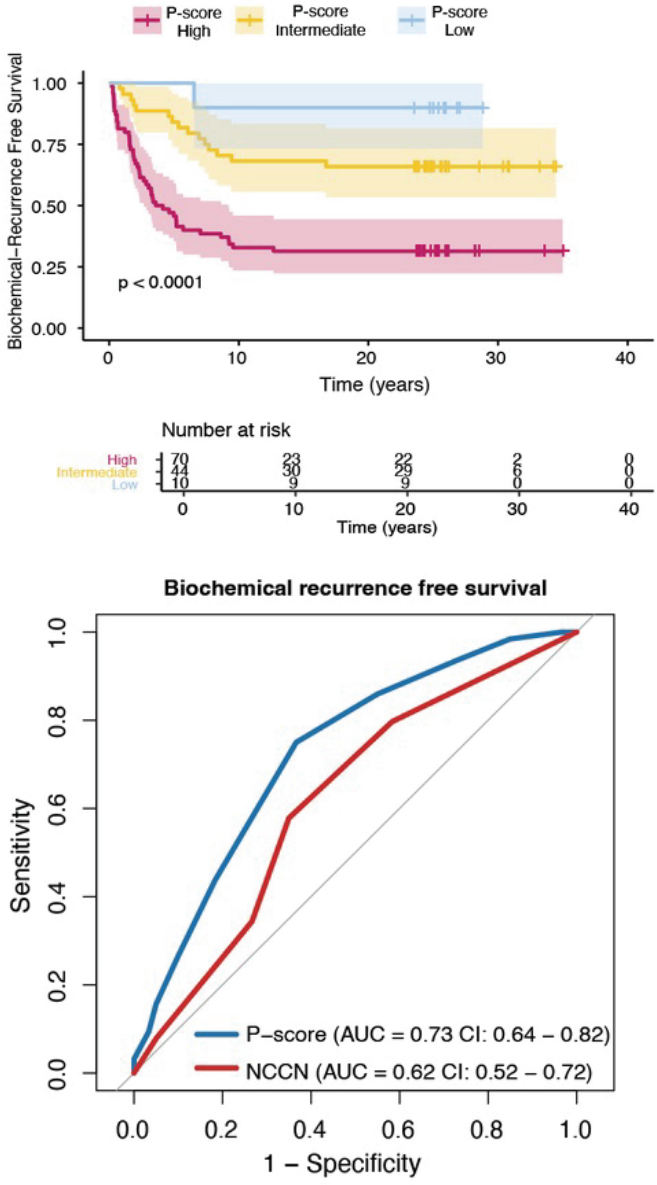
Introduction: Accurate prediction of biochemical recurrence (BCR) after radical prostatectomy is crucial for risk stratification and treatment planning. Traditional models like NCCN risk stratification are widely used but have limitations in predictive accuracy, particularly within the high-risk group. This study evaluates the Prostatype P-score, a genomic classifier combining VGLL3, IGFBP3, and F3 gene expression with clinical factors (PSA, T-stage, Gleason score), for predicting BCR-free survival compared to NCCN risk groups.

Method: We analyzed 124 prostate cancer patients treated with radical prostatectomy at Uppsala University Hospital between 1990 and 2001. Median age was 62 years (IQR: 9), and median PSA was 9.55 ng/mL (IQR: 8.4). Based on NCCN classification, 31% were low risk (n=40), 22% favorable intermediate (n=28), 16% unfavorable intermediate (n=20), 25% high risk (n=32), and 6% very high risk (n=8). A total of 64 patients (52%) experienced BCR, defined as two consecutive PSA rises ≥0.2 ng/mL. Kaplan-Meier survival curves stratified by P-score groups (Low, Intermediate, High risk) and receiver operating characteristic (ROC) curves were generated. Area under the curve (AUC) values were calculated to compare the predictive performance of P-score and NCCN risk stratification.

Results: Kaplan-Meier analysis showed significant differences in BCR-free survival between P-score risk groups ($p < 0.0001$). High-risk patients had significantly worse outcomes than Intermediate- and Low-risk groups. The P-score demonstrated superior discriminative performance (AUC: 0.73, 95% CI: 0.64–0.82) compared to NCCN (AUC: 0.62, 95% CI: 0.52–0.72).

Conclusion: The Prostatype P-score not only improved predictive accuracy for BCR-free survival over NCCN risk stratification but also revealed significant risk differentiation among patient groups. By integrating genomic profiling with clinical factors, teh P-score offers a transformative approach to personalized prostate cancer management.



AS-2.032

Impact of Neoadjuvant Degarelix on MRI Characteristics in MRI-Guided Transurethral Ultrasound Ablation: Early Results from a Pilot Study

Mikael Anttinen[1,2], Ilari Virtanen[1], Pietari Mäkelä[3], Teija Sainio[4], Mikael Högerman[1], Pertti Nurminen[1,2], Otto Ettala[1,2]

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Introduction: MRI-guided transurethral ultrasound ablation (TULSA) provides oncologic control in localized prostate cancer (PCa) while preserving genitourinary function but is limited by a 3 cm treatment radius, particularly in larger prostates with tumors near the capsule. Neoadjuvant androgen deprivation therapy (nADT) may improve TULSA efficiency by reducing prostate and tumor volume, homogenizing tissue properties, and mitigating the heat-sink effect through decreased perfusion. This study evaluates the impact of a 3-month nADT course with degarelix on MRI characteristics relevant to TULSA.

Method: This prospective, single-arm study included 15 patients with organ-confined Gleason Grade Group 2–3 PCa (PSA ≤20 ng/mL) and at least one MRI-visible (Prostate Imaging-Reporting and Data System >2), biopsy-confirmed lesion. Patients received 3 months of nADT (degarelix 240 mg, then 80 mg monthly) before whole-gland TULSA. Multiparametric MRI at baseline, [1,2] , and 3 months post-nADT assessed changes in prostate volume, tumor dimensions, capsular contact, bulging, urethra-capsule distance and perfusion.

Results: All patients (median age: 67 years, IQR 60–71) completed nADT and achieved castrate testosterone levels (<1.0 nmol/L) within three months. Prostate volume decreased from 51 mL

(35–65) to 38 mL (24–46) (p<0.001), with the greatest reduction in the first two months. Tumor volume declined from 1.3 mL (0.6–2.1) to 0.4 mL (0.2–0.9) (p<0.001). At the index lesion, capsular contact decreased from 15 mm (10–22) to 9 mm (7–12) (p<0.001), capsule bulging reduced from seven to three patients, and urethra-capsule distance shortened to ≤30 mm in all six initially >30 mm cases. Perfusion analysis (currently available for n=8) showed a non-significant decrease in prostate blood flow (6.7 to 5.8, p=0.12), while tumor perfusion significantly declined (13.5 to 6.2, p=0.04).

Conclusion: nADT with degarelix significantly reduces prostate and tumor volume, improves tumor accessibility for ablation, and decreases perfusion, potentially enhancing TULSA efficiency. Further studies will evaluate its impact on treatment success and long-term outcomes.

AS-2.033

Effect of Neoadjuvant Degarelix on MRI-Guided Transurethral Ultrasound Ablation in Intermediate-Risk Prostate Cancer: A Pilot Study in Progress

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Introduction: MRI-guided transurethral ultrasound ablation (TULSA) offers oncologic control in prostate cancer (PCa) while preserving urinary and sexual function. However, achieving complete ablation near the prostate capsule remains challenging due to prostate size, heterogeneous tissue density, and increased vascularity. Neoadjuvant androgen deprivation therapy (nADT) may enhance ablation conditions by reducing prostate and tumor volume, homogenizing tissue properties, and decreasing perfusion, potentially improving TULSA ablation outcomes. This study evaluates the safety of combining TULSA with nADT and its impact on treatment effectiveness.

Method: This prospective, single-arm study (NCT05917860) includes 15 patients with localized Gleason Grade Group 2-3 PCa (PSA ≤20 ng/mL) and at least one MRI-visible, biopsy-confirmed lesion. Patients undergo a 3-month neoadjuvant course of degarelix (240 mg loading dose, followed by 80 mg monthly) before whole-gland TULSA. Serial multiparametric MRI (mpMRI) at baseline and post-nADT assess prostate tissue changes. Post-TULSA, MRI thermometry and contrast-enhanced MRI evaluate acute ablation coverage. Follow-up includes mpMRI at 3 and 12 months, targeted biopsy at 12 months, and oncologic and survival assessments at 12, 36, and 60 months. Primary outcomes are prostate and tumor volume reduction and treatment-related adverse events. Secondary outcomes include MRI-based prostate and tumor changes, thermal coverage, quality-of-life, functional outcomes, prostate-specific antigen kinetics, biopsy outcomes, and long-term survival.

Results: All 15 patients have completed nADT and whole-gland TULSA; one-year follow-up is ongoing. Early MRI findings after nADT show reductions in prostate and tumor volume, tumor-capsule contact, and perfusion. These changes may influence ablation coverage and oncologic outcomes; further analysis is ongoing. Ablation coverage and oncologic control at 12 months will be assessed. Final data collection for primary endpoint analysis is expected in January 2026; study completion in 2030.

Conclusion: This study provides critical insights into the potential role of nADT in optimizing TULSA planning and oncologic outcomes. Findings will guide treatment optimization and inform future trials.

AS-2.034

CAPTAIN randomized controlled trial of TULSA against radical prostatectomy for intermediate-risk prostate cancer: Design and best practices for successful recruitment

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Introduction: The CAPTAIN randomized controlled trial (RCT) evaluates whether MRI-guided transurethral ultrasound ablation (TULSA) is non-inferior to radical prostatectomy (RP) for efficacy and superior for safety in men with intermediate-risk prostate cancer (PCa). TULSA has been evaluated in single-arm trials and post-market registries, supporting its safety and efficacy. A direct comparison to RP is the next step; however, previous trials of other ablative therapies failed to meet enrollment targets and generate Level 1 evidence. CAPTAIN has successfully achieved its randomization target, and we describe best practices from a high-enrolling European site.

Method: CAPTAIN (NCT05027477) includes men with localized, intermediate-risk PCa (Grade Group 2 or 3) eligible for RP,

randomized 2:1 to receive TULSA vs. RP. Patients assigned to TULSA receive one or two subtotal (>50% ablation coverage) to whole-gland ablations, while RP follows local standard-of-care procedures. Crossover is not allowed. Co-primary outcomes are as follows: 1. Safety at 12 months: Preservation of erections sufficient for penetration and pad-free continence. 2. Efficacy at 36 months: Freedom from additional intervention for PCa.Long-term 10-year follow-up includes PSA monitoring, complications, quality-of-life assessments, survival outcomes, and MRI and biopsy data (TULSA only).

Results: As of February 2025, all 201 patients have been randomized across 24 centers in the USA, Canada, and Europe. At a top-recruiting European site with 100% allocation acceptance and high patient-reported satisfaction, CAPTAIN was offered to patients initially favoring RP. Presenting treatments neutrally and educating patients on the trial's goal of determining superiority fostered equipoise, trust, and shared decision-making.

Conclusion: CAPTAIN is the first successfully recruiting RCT comparing an ablative therapy to RP in intermediate-risk PCa. By achieving full enrollment, CAPTAIN overcomes past recruitment challenges and establishes a framework for future trials. The study will generate Level 1 evidence on whether TULSA is a less invasive, effective alternative to RP, influencing treatment decisions and shaping PCa management.

AS-2.035

Incidences of low-risk and locally advanced or metastatic prostate cancer across sociodemographic groups in Sweden

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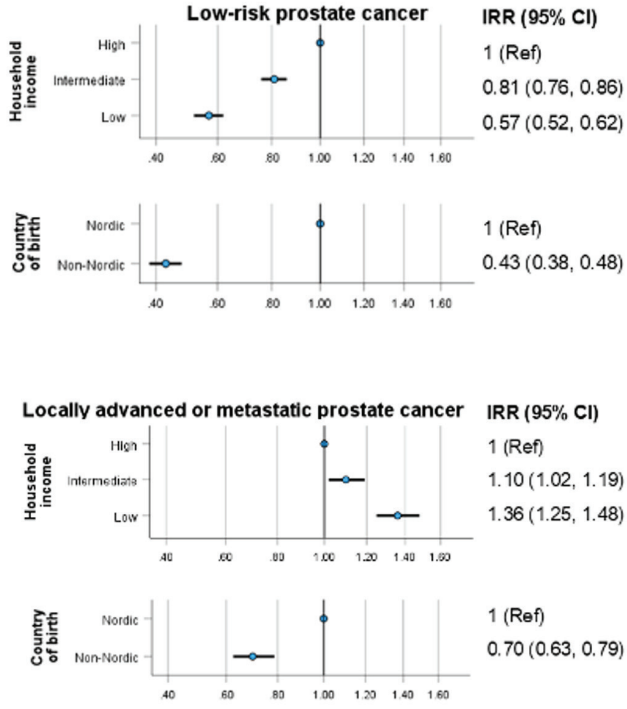
Introduction: Socioeconomic factors affect many cancer-related outcomes, but nationwide incidences of prostate cancer across sociodemographic groups have not been reported.

Method: We used Swedish register data in PCBaSe for 2018–2019 to estimate the nationwide incidences of locally advanced or metastatic prostate cancer ("advanced disease") at diagnosis and related them to the incidence of low-risk prostate cancer, as a marker of diagnostic activity. We used Poisson models

to calculated age-adjusted incidence rate ratios (IRR) without (upper part of Figure) and with (lower part of Figure) adjustments for the other covariates.

Results: We found a gradient in the age-standardized incidence of advanced disease across groups of men with a high, intermediate, or low household income, from 44 to 60 per 100 000/year, and a reciprocal gradient in the incidence of low-risk disease from 60 to 34 per 100 000/year. In men born in a non-Nordic country, the incidences of both advanced and low-risk disease were lower than in men born in a Nordic country (advanced: 39 vs 52 per 100 000/year; low-risk: 24 vs 55 per 100 000/year. IRRs are shown in Figure. Limitations of the study include lack of data on PSA testing and a crude categorization of country of birth.

Conclusion: Our results suggest that measures to facilitate early detection of prostate cancer should be targeted to men with a low income. In contrast, a low diagnostic activity for prostate cancer among immigrants from countries with low background risk may be a rational choice rather than a consequence of unjustified social disparity.



AS-2.036

Readmissions and complications after same day discharge following robot-assisted laparoscopic prostatectomy in Iceland: A nationwide population-based study

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Introduction: Same day discharge (SDD) after robot-assisted laparoscopic prostatectomy is the standard treatment process in

Iceland, overtaking the conventional overnight hospital stay. This nationwide study evaluates success rate, complications and readmissions after SDD.

Method: The study population involved 316 patients who underwent RALP between September 2019 and December 2023. Operational, clinical and oncological variables were collected retrospectively through manual chart review. Readmissions and complications within 30 days were recorded. Complications were listed in the Clavien-Dindo classification system. Variables were compared between SDD patients, logistically admitted patients and patients admitted due to medical complications.

Results: Of the total 316 patients, 261 (82.6%) were successfully discharged on the day of surgery. There was a significant difference between patients admitted due to medical complications and SDD patients, concerning complications and readmissions (21% vs. 4.6%; p=0.016). Other collected variables were comparable. There was no significant difference in complications and readmissions when SDD patients were compared with logistically admitted patients (4.6% vs. 2.8%; p>0.9). Complications classified as Clavien-Dindo 3b or above, were recorded in 4 patients (1.3%). There was one death recorded within 90 days from surgery, which was unrelated to operational or oncological complications.

Conclusion: The results suggest that SDD is a safe strategy. Major complications are rare, and the readmission rate is low.

AS-2.037

Inclusion of Men with Prostate Cancer in Active Surveillance in Norway: Real-world Guidelines Adherence 2009-2022

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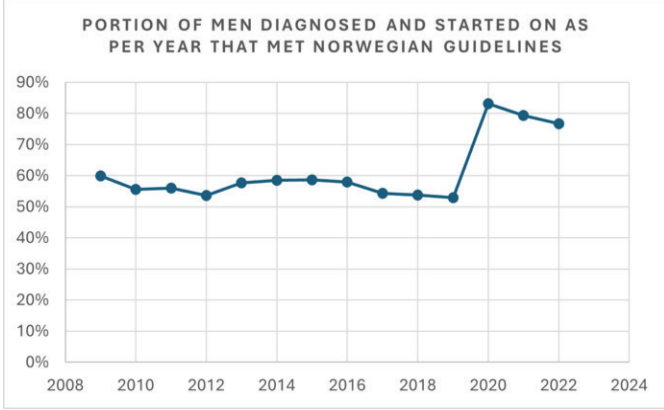
Introduction: This study aims to document characteristics of Norwegian prostate cancer (PCa) patients included in active surveillance (AS) and to assess if men were included as recommended by national guidelines.

Method: We conducted a historical prospective cohort study of PCa men registered with AS in the Norwegian Prostate Cancer Registry 2009-2022 and merged with comorbidity data from the Norwegian Patient Registry. We documented patient and disease characteristics at diagnosis to evaluate guideline adherence and evaluated regional and temporal trends in AS inclusion.

Results: In total, 11 449 men were included in AS. The median age was 67 years (range 38-96), and 90% had ECOG score <2. In total, guideline adherence was 61% in Norway, increasing from 57% in 2009-2011 to 80% in 2020-2022 (Figure). Key diagnostic measures, including PSA <10 and ISUP grade 1, showed improved eligibility: PSA <10 rose from 79% to 85%, and ISUP 1 increased from 75% to 87% by 2020-2022. Intermediate-risk inclusion saw a considerable rise from 2% in 2009-2011 to 94% in 2020-2022. Regional differences in guideline adherence were identified, with Rogaland having the highest in Norway throughout, from 70% in 2009-2011 to 89% in 2020-2022. Vestfold and Telemark and Agder had lowest guideline adherence in 2009-2011 (48%) and Trøndelag in 2020-2022 (68%).

Conclusion: One in three Norwegian men included in AS were not eligible according to guidelines. Adherence increased from 2020, when guidelines were updated to include intermediate-risk patients. The observed regional variations underline the need to ensure consistent implementation of AS guidelines across Norway.



AS-3.038

Evaluating the accuracy of intraoperative frozen section analysis of dynamic sentinel node biopsies in penile cancer

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Introduction: In penile squamous cell carcinoma (PSCC), surgical staging can be achieved with dynamic sentinel node biopsies (DSNB). This study aimed to evaluate the accuracy of intraoperative frozen section analysis of sentinel nodes for detection of inguinal metastasis.

Method: Between 2011-2023, 57 patients underwent either unilateral (n=22) or bilateral (n=35) PSCC surgery with intraoperative frozen section analysis of the DSNB. In this ethically approved study, all histopathological examinations were reviewed, and human papillomavirus (HPV) DNA status was obtained by polymerase chain reaction (PCR) and detection of the HPV L1 gene in stored tumor tissue from the local biobank. Hospital records were retrospectively analyzed for clinical variables and disease course. Sensitivity and specificity analysis of the frozen section analysis compared to final pathology was performed for the 92 cN0 groins.

Results: HPV DNA was detected in 34 (60%) patients. Compared to final histopathology, there were no cases of false positive frozen sections. There were 16 true positive, 74 true negative and 2 (both HPV-33 positive) false negative examinations. Sensitivity and specificity were 0.89 (0.67-0.97) and 1 (0.95-1), respectively. In total, 20 % (18 out of 92) of the groin examinations harbored metastatic tissue. None of the patients with bilaterally true negative examinations have later developed inguinal metastasis (median 35 months follow-up), a strong indication that the correct nodes were examined.

Conclusion: The use of frozen section analysis of sentinel nodes during penile cancer surgery is a safe and accurate method for intraoperative detection of inguinal lymph node metastasis.

AS-3.039

Lymph node surgery after centralization of penile cancer care in Sweden – extent of use and complications

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Introduction: Curative penile cancer (PeCa) surgery was in 2015 centralized to two hospitals in Sweden. This study compares the use of lymph node surgery and complication rates before and after the centralization.

Method: All 1079 patients with invasive PeCa in the Swedish National Penile Cancer Register (NPECR) diagnosed between 2009 and 2020 were included, 458 before and 621 after centralization. Proportion of patients subjected to lymph node surgery 2009-2014 vs 2015-2020 was compared with Pearson's Chi-squared test. Odds ratios (OR) for complications were calculated using a logistic regression model adjusting for age, nodal stage, and extent of penile surgery. Continuous variables were presented as medians with inter quartile ranges (IQR) and compared with Wilcoxon's rank sum test.

Results: Before centralization 270/458 (59%) of patients were subjected to lymph node surgery compared to 474/621 (76%) after 2014. Overall complication rate for patients undergoing such surgery was similar (35%) before and after centralization. After Dynamic Sentinel Node Biopsy (DSNB) overall complications increased from 17% (22/126) to 32% (91/288) after centralization corresponding to an adjusted OR of 1.89 (95% confidence interval (CI) 1.09-3.27). For lymphocele, lymphedema or infection after modified or radical inguinal lymphadenectomy or pelvic lymphadenectomy, the adjusted OR was 0.47 (95% CI 0.29-0.75) after centralization. The register-based setting is a study limitation.

Conclusion: The proportion men receiving lymph node surgery increased and risk of lymphedema, lymphocele and infection after inguinal and pelvic lymph node surgery decreased after centralization of PeCa care.

AS-3.040

Diagnostic accuracy of [18F]-FDG PET/CT for detecting regional lymph node metastasis in penile cancer. An evaluation stratified by human papillomavirus status.

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Introduction: [18F]-FDG PET/CT offers a non-invasive staging of regional lymph node status in penile squamous cell carcinoma (PSCC). However, limited sensitivity and specificity have been reported. The aim of this study was to assess if the diagnostic accuracy of PET/CT to detect inguinal and pelvic metastasis depends on the human papillomavirus (HPV) status of the tumor.

Method: 81 treatment-naive patients operated for PSCC at Haukeland University Hospital between 2010–2024, with a PET/CT prior to inguinal surgery, were included. HPV DNA status of tumor tissue was obtained, and histopathology was reevaluated according to current TNM classification. Medical records and PET/CT results, including the maximum standardized uptake value (SUVmax) of the inguinal lymph nodes, were registered. PET/CT inguinal results were compared against histopathology (n=72) or findings after follow-up (n=9) and stratified by HPV status. Results for 17 pelvic regions with final pathology were also compared.

Results: HPV DNA was detected in tumor tissue from 41 (51%) patients. For all patients combined, sensitivity and specificity of PET/CT to detect inguinal metastasis were 0.83 (0.69 – 0.93) and 0.68 (0.58 – 0.76). There were no significant differences when stratified by HPV status (both $p > 0.8$). In multivariable logistic regression, adjusted for PET/CT timing (before or after penile surgery), number of PET/CT positive inguinal nodes, SUVmax and HPV status, only SUVmax was an independent predictor for inguinal lymph node metastasis (OR 1.25, 95% CI: (1.11 - 1.45), $p < 0.001$). There was no significant interaction between SUVmax and HPV status ($p=0.57$). The accuracy of PET/CT for detection of pelvic metastasis did not depend on HPV status ($p > 0.9$).

Conclusion: The diagnostic accuracy of [18F]-FDG PET/CT regarding preoperative detection of inguinal and pelvic lymph node metastasis is not dependent on HPV status in penile cancer.

AS-4.041

Validation of clinical T stages and of prognostic negative markers in patients with muscle invasive bladder cancer; data in the Swedish National Bladder Cancer Registry versus data from a detailed research database.

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Introduction: A published study from Norrland University Hospital, Umeå, Sweden, found that in 29.5% of patients with urinary bladder cancer who underwent cystectomy, incorrect cT-stage (clinical T-stage) was registered in the Swedish National Register of Urinary Bladder Cancer (SNRUBC). Tumor in bladder diverticulum (TIBD) and tumor associated hydronephrosis (TAH) were common causes for misclassification. Aim: To further investigate cT-staging and pathoanatomical markers, in the SNRUBC, compared to detailed data from medical records in a larger multicenter cohort. Further, to describe the frequency of pathoanatomical markers in pathology reports (PAD) post-transurethral resection of the bladder (TURb): variant histology (VH), concomitant carcinoma in situ (CIS), lymphovascular invasion (LVI) and perineural invasion (PNI).

Method: 630 patients planned for radical cystectomy in the years 2009-2022 in the Northern Healthcare Region, Region of Gävleborg and Region of Västmanland were reviewed retrospectively. Factors impacting risk of misclassification of cT-staging were identified through logistic regression. In TURb pathology reports, all comments on pathoanatomical markers were identified.

Results: A total discrepancy rate of 36.5% was found between validated cT-staging and the SNRUBC, of which 13.3% were upstaged from <T2 to ≥T2. The results are presented as odds ratios (ORs) with corresponding 95% confidence intervals (CIs). Registrations with discrepancy were significantly associated with TIBD; OR: 10.3 (5.20 – 20.34; 95% CI), TAH; OR: 9.6 (6.12 – 15.10; 95% CI) and year of cystectomy 2009-2011; OR: 3.4 (2.13 – 5.36; 95% CI). Incorrect CIS registration: 134 (35.8%); incorrect histology registration: 98 (25.6%). Total frequencies of recorded pathoanatomical markers in TURb-reports were for VH=23.8%, Concomitant CIS = 36.9%, LVI=30.4%, PNI=2.3%.

Conclusion: The SNRUBC has a significant prevalence of misclassification of cT-staging with a large proportion due to TAH and TIBD. Misclassification of VH and CIS is also common. Improved guidelines could increase consistency. Total rates of recorded pathoanatomical markers in TURb-reports are low.

AS-4.042

Does Neoadjuvant chemotherapy and radical cystectomy in muscle invasive bladder cancer obliterate survival differences between genders?

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Introduction: The five-year survival rate in Muscle invasive bladder cancer (MIBC) is approximately 50%, cross over cT-stages in chemo naive patients. Studies indicate lower survival rates in females when compared to males. The theories that explain the sex disparity are hormonal factors and delayed diagnosis for females. New investigations suggests that Neoadjuvant chemotherapy (NAC) might be a possible method for bridging the gender survival gap. Our aim was to investigate if complete treatment with NAC (3≥cycles) pre-cystectomy will diminish the gender gap for survival rates in MIBC and the surrogate marker downstaging.

Method: A multicenter retrospective cohort from seven Swedish urological centers, 2005-2023 based on NAC-eligible patients divided in NAC-receiving and Non-NAC receiving subgroups and further divided by sex; males and females. Survival was analyzed based on the Kaplan-Meier method, using Log Rank test and adjusted analyses were made with the Cox regression model. Outcome measurements were overall survival (OS), disease free survival (DFS) and downstaging.

Results: Anlysing the total cohort (n=412), could not detect any statistically significant differences in overall survival (OS) between NAC and non-NAC, nor between sexes, in the unadjusted analysis. In the adjusted analysis, we did not observe any significant differences in overall survival (OS) between sexes, either in total or within the NAC subgroups. However, we detected a significant increase in survival for those receiving NAC treatment. Comparing the NAC-groups we could see a significant increased downstaging rate in the NAC-group compared to the non-NAC group (p<0,001). There was no relationship between sexes and downstaging (p=0,718). Neither could we see any significant difference in downstaging between males and females in the NAC/non-NAC subgroups (p=0,406, p=0,920).

Conclusion: NAC-eligible female and male MIBC-patients who underwent radical cystectomy after at least three cycles of NAC, demonstrated similar OS and DFS. NAC seems to obliterate survival differences between genders in MIBC-patients.

AS-4.043

A validation study on the number of NAC-cycles in patients with muscle-invasive bladder cancer: Data from a clinical database versus data in the official national register

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Introduction: Muscle-invasive bladder (MIBC) cancer stands for approximately 25% of urinary bladder cancers. The administration of NAC (neoadjuvant cisplatin-based chemotherapy) pre-radical cystectomy (RC) has significantly improved the survival rates for MIBC-patients. To be classified as 'NAC yes,' a patient must have undergone at least three cycles of NAC. Objectives were to address potential disparities between the Swedish National Register of Urinary Bladder Cancer (SNRUBC) and our validated data, particularly concerning the patients classified as 'NAC-yes'.

Method: The retrospective cohort consisted of all patients who had undergone cystectomy for MIBC and had been registred having received NAC pre-cystectomy spanning the years 2009-2022 from six institutions in Sweden (The Northern health care region with four centres, Gävleborg region and Västmanland region).Totally 234 patients, staged cT2a-T4aN0M0 were evaluated. The data from individual patient medical records were compared with the information recorded in the SNRUBC-registry. Statistical inference was employed to construct confidence intervals for the proportion of patients receiving a reduced dosage and those categorized as 'NAC yes', despite not meeting the criteria. A comparison of the misreported entries in the registry was conducted between different hospital types by using Fisher's exact test.

Results: SNRUBC classified 18% [95% CI, 14%–24%] as 'NAC-yes' although the patients received less than three cycles. The distribution of patients classified as 'NAC-yes' despite receiving only one cycle was 11%, and those who received only two cycles was 8%. The proportion of patients classified as 'NAC-yes' in the SNRUBC who had received reduced dosages was 17% [95% CI, 13%–23%].

Conclusion: The SNRUBC and our validated data show significant disparities. It could be advisable for institutions to carefully review their registration process within the SNRUBC to reduce the incidence of misclassifications.

AS-4.044

Response rates and survival outcomes in patients with muscle-invasive bladder cancer receiving neoadjuvant chemotherapy stratified by number of cycles

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Introduction: Neoadjuvant chemotherapy (NAC) followed by radical cystectomy (RC) is the standard treatment for MIBC in medically fit patients, the optimal number of NAC cycles remains insufficiently studied.Our aim was to evaluate differences in overall survival and pathological downstaging outcomes between patients receiving optimal (≥3 cycles) versus suboptimal (<3 cycles) NAC treatment in patients diagnosed with locally advanced MIBC.

Method: This multicentre cohort study analysed 207 patients with non-metastatic urothelial MIBC (cT2-T4aN0M0) who received NAC and subsequent RC between 2008-2022 across seven Swedish health regions: Region Västerbotten, Region Jämtland-Härjedalen, Region Norrbotten, Region Västernorrland, Region Gävleborg, Region Östergötland and Region Västmanland. Patients were stratified into two groups: <3 cycles (n=36) and ≥3 cycles (n=171). Primary outcomes included pathologic downstaging and overall survival (OS). Survival analysis was performed using Kaplan-Meier method with both multivariable and univariable Cox proportional hazards regression.

Results: Median OS was significantly longer in the ≥3 cycles group (146.0 months vs 80.3 months, p=0.046). This survival benefit remained significant in multivariable analysis (HR 0.557, 95% CI: 0.321-0.968, p=0.038). Pathologic downstaging (CR+PR) was achieved in 52.9% of patients, with rates of 38.9% and 55.9% in the <3 and ≥3 cycles groups, respectively (p=0.069). Among patients with progressive disease (PD), those receiving ≥3 cycles showed significantly better survival (42.1 vs 11.2 months, p=0.008) than PD-patients with <3 cycles. Yet, for PD-patients, adjuvant/palliative treatment has not been included in the calculations. All non-complete responders (PR+SD+PD) demonstrated improved OS with ≥3 cycles (108.9 vs 31.4 months, p=0.023).

Conclusion: Completing three or more cycles of NAC is associated with significantly improved OS in MIBC patients, independent of pathologic response. This survival benefit extends to patients who did not achieve complete response. Downstaging rates showed a

trend favouring ≥3 cycles, these differences were not statistically significant.

AS-4.045

Robot-Assisted Radical Cystectomy in Iceland

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Introduction: Radical cystectomy (RC) is the standard treatment for muscle-invasive bladder cancer. According to an Icelandic study on open radical cystectomies (ORC) from 2003 to 2012, complications were frequent (57%), length of stay substantial (15 days median) and blood transfusions common (38% intra-operatively). In 2015, robot-assisted radical cystectomy (RARC) was implemented in Iceland with the aim of expediting recovery and reducing length of stay. The objective of this study was to investigate outcomes in patients with bladder cancer undergoing RARC in Iceland.

Method: All patients undergoing RARC for bladder cancer from 2015 to 2023 in Iceland were included. Information was obtained retrospectively from patients' electronic medical records. Complications were classified according to the Clavien-Dindo system. The Kaplan-Meier method was used for survival analysis.

Results: 67 patients underwent RARC during the study period and all operations were performed by the same surgeon. The median operation time was 375 minutes and the median intra-operative blood loss was 100 mL. No patient required intra-operative blood transfusion. 2 patients received post-operative blood transfusion. The median length of stay was 6 days. Complications were reported for 57% of patients; 34% exclusively had minor complications (CD 1-2) while 22% had major complications (CD 3+). 13% required re-admission within 90 days. 12% had to undergo re-operation within the follow-up time. Mortality rate at 30 and 90 days after surgery was 0% and 1% respectively and 5-year overall survival was 59%. The median follow-up time was 981 days.

Conclusion: Complication rate and survival following RARC in Iceland is comparable to that of neighbouring countries. Operation time is longer than after ORC but length of stay is considerably shorter. Intra-operative bleeding is limited and blood transfusions are an exception. Re-admission and re-operation rates are lower than after ORC. The results are limited by the small sample size and retrospective collection of data.

AS-4.046

Early recurrence after primary TURBT for non-muscle invasive bladder cancer in Iceland

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Introduction: Transurethral resection of bladder tumor (TURBT) is the standard treatment for non-muscle invasive bladder cancer (NMIBC). NMIBC has a high recurrence rate, and early recurrences are common. The aim of this study was to standardize the treatment for newly diagnosed NMIBC at our institution and establish a treatment protocol for patients undergoing primary TURBT for NMIBC, with the goal of reducing early recurrence rate after primary TURBT.

Method: All patients with newly diagnosed NMIBC who underwent a primary TURBT at Landspitali University Hospital from 2013-2015 and 2017-2019 were included. The study consisted of two groups; patients who underwent primary TURBT before and after implementation of our treatment protocol. Information was obtained retrospectively from patients' medical records. The primary endpoint was early recurrence rate.

Results: A total of 133 and 138 patients underwent primary TURBT for NMIBC during the study period in the control group and the intervention group, respectively. There were no differences in tumor stage or tumor grade between the two study groups. The use of postoperative continuous bladder irrigation increased significantly (48% vs 90%) after the intervention. Hexvix blue-light cystoscopy was used in 59% of all primary TURBTs in the intervention group compared to no use in the control group. There was no statistically significant difference in early recurrence rate between study groups. In the control group, 15% of patients had a recurrence at first control cystoscopy compared to 16% in the intervention group. Early recurrence rate as well as the presence of detrusor muscle in the specimen varied significantly between surgeons. Early recurrence rate ranged from 11 – 40% between surgeons.

Conclusion: We found no difference in early recurrence rate after implementation of our treatment protocol. Our results suggest that the quality of the TURBT might be one of the most important factors in lowering early recurrence rate after primary TURBT.

AS-4.047

Does extent of lymph node dissection affect downstaging in patients with MIBC undergoing Neoadjuvant Chemotherapy and RC?

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Introduction: Bladder cancer is a common cancer type especially among men, being the 6th most diagnosed male cancer globally. Treatment of muscle invasive bladder cancer (MIBC) involves neo-adjuvant chemotherapy (NAC) and radical cystectomy (RC) in medically fit patients. The optimal extent of regional lymph node dissection (LND) is uncertain especially in the setting of NAC. Disease downstaging predicts long term survival and has been proposed as a surrogate marker for overall survival (OS). Our aims were to determine whether extent of LND correlates with disease downstaging in NAC-treated locally advanced (clinical stage T2-4aN0M0) urothelial MIBC.

Method: This was a multicenter retrospective study on consecutive locally advanced MIBC patients undergoing RC at 4 Swedish hospitals in 2007-2022 (Norrland university hospital, Umeå, länssjukhuset Sundsvall/Härnösand,Västmanland hospital and Linköping university hospital).The effect of LND extent (no, limited, standard or extended LND) on frequency of the binary outcome disease downstaging was assessed by Chi-squared test in a NAC-treated primary cohort (n=195) and in a NAC-eligible but NAC-naïve parallel cohort (n=110). Two definitions of downstaging, based on pathological TNM stage after cystectomy, were assessed: complete response (pT0N0M0) and non-muscle invasive disease (pT<2N0M0).

Results: No significant impact of LND extent on downstaging frequency was found for any definition of disease downstaging in NAC-treated patients. The small size of the no-, limited and extended LND groups (each n < 20) impacted statistical analysis.

Conclusion: No impact of larger LND on chance of disease downstaging indicates that performing a smaller LND might be sufficient. Methodological limitations such as retrospective design, using a surrogate outcome rather than actual OS, small group sizes, and confounding by lymph node numbers, limit interpretation.

AS-4.048

Data-driven Optimization of the Pre-operative Patient Assessment Prior to Radical Cystectomy and Nephroureterectomy - TRACE

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Introduction: Danish national cancer guidelines require urological cancer surgery within 7-16 days, allowing only brief consultations, complicating activities of daily living assessments and postoperative outcome predictions. Smartwatches tracking biometric data are widely used for digital health monitoring. Machine learning can predict postoperative outcomes by analyzing these biometrics and patient characteristics. CT body composition can identify frailty, aiding in risk stratification for major cancer surgery.

Method: This project is a prospective cohort study of urologic patients with muscle-invasive bladder cancer, ureteral cancer, and renal pelvis cancer undergoing major surgery. Starting in early 2025, patients will be recruited until mid 2025. Patients will be screened for fragility and physical function, wear a smartwatch for a week before surgery, and have their preoperative CT scans analyzed using body composition software. A one-month follow-up will classify perioperative events.

Results: The primary endpoint is 30-days complication rate, while the secondary endpoints are 30-days readmission, and mortality rates.

Conclusion: The study hypothesizes that surgical outcomes of robot-assisted radical cystectomy and nephroureterectomy are linked to patients' daily activities (ADL). Using smartwatches for ADL monitoring and software for body composition analysis, it aims to identify key factors affecting post-surgery outcomes.

AS-4.049

Intraoperative Mitomycin C Instillation During Radical Nephroureterectomy: Impact on Intravesical Recurrence and Postoperative Complications – A Retrospective Study

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Introduction: It has been established that intravesical Mitomycin-C instillations (MMC) following radical nephroureterectomy (RNU) for upper urinary tract urothelial carcinoma (UTUC) reduces the risk of bladder tumor recurrence, which is seen in up to 47% of patients. However, the timing of intravesical chemotherapy is still debated. Previous research has established that intraoperative MMC instillation is both safe and feasible, but cohorts remain small and with short follow up. We present the current largest cohort of patients with long term follow up that received intraoperative MMC during RNU.

Method: This is a retrospective observational cohort study including all patients at Department of Urology, Zealand University Hospital who underwent RNU for UTUC from January 2017 to December 2023, where intraoperative MMC instillation right after bladder cuff excision was implemented as standard treatment. A total of 144 patients underwent RNU during the study period. The primary endpoint was intravesical recurrence rates (IVR), while secondary endpoints included overall survival and the 90-days complication rate.

Results: The study anticipates exposing the relationship between intraoperative MMC instillation and IVR rates post-RNU. Our previous datacollection suggests that intraoperative MMC instillation

right after bladder cuff excision is effective in reducing bladder recurrence, with the first recurrence by 15 months. By focusing on the intraoperative timing of MMC, this study seeks to fill existing gaps in knowledge regarding the most effective protocols for MMC administration.

Conclusion: Following our previously published paper regarding the feasibility and safety of MMC instillation we would like to present our updated IVR recurrence data, with at least two years of follow-up.The finalized dataset and analyses will be prepared for presentation at NUF 2025.

AS-4.050

Long term follow-up of endoscopic ablation of Upper Tract Urothelial Tumours

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Introduction: Endoscopic ablation (EA) of Upper tract urothelial carcinoma (UTUC) can be used in selected cases. The aim of the present study was to evaluate long term results of EA at a tertiary referral centre with special emphasis on possible factors that predict treatment outcomes.

Method: 78 patients treated with EA during 2001-2022 at Haukeland University Hospital were included in the study. 55 of the patients were candidates for nephroureterectomy (NU) at diagnosis, and the indication for EA was elective. We had histopathological verification of diagnosis in 69 (88%) of the tumours of which 53 were low grade. Favorable outcome was defined as a patient treated with EA only with no subsequent need for NU or development of metastatic disease. Continous and nominal variables were analysed using t-test and chi square tests respectively.

Results: Median (IQR) age was 75 (70-79) years and follow-up 68 (33-124) months. NU was performed among 27 of 55 patients candidates for NU after a median (IQR) of 12 (3-21) months. 32 had a favorable outcome, 27 of these after 1-3 ablations. A favorable outcome could only rarely be achieved after 3 ablations. Predictors for favorable outcome were tumour grade (OR 7.0, (1.4-34), p =0.01) and status at first follow up (endoscopically tumour free or not, OR 4.6 (1.6-13), p <0.01). 16 patients experienced disease progression and died from UTUC, 10 of these were patients not candidates for NU.

Conclusion: EA can be considered among patients with LG tumour. Status at first follow-up is a strong predictor of outcome.

AS-4.051

Distinct Genomic Landscape of Lynch Syndrome-Associated Urothelial Cancer

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Introduction: Lynch syndrome (LS) is a hereditary cancer predisposition syndrome caused by DNA mismatch repair (MMR) deficiency and associated with a 10–25% lifetime risk of urothelial cancer (UC), particularly in the upper urinary tract. We aimed to investigate the somatic genomic landscape of LS-associated urothelial cancer (LS-UC) using targeted and whole-exome sequencing (WES).

Method: We analyzed 41 surgical tumor samples accrued to five Finnish biobanks between April 1987 - June 2022 and 3 urine DNA samples from 34 LS-UC patients. Tumors were profiled using the UroScout assay, targeting 25 UC-associated genes, to identify somatic mutations. Immunohistochemistry was performed to assess MMR protein loss, and WES was conducted on selected cases to investigate the broader mutation landscape. Comparative analysis of the genomic and mutational landscapes in LS-UC versus sporadic UC was performed.

Results: We show that telomerase reverse transcriptase (TERT) promoter mutations found in 83% of sporadic UC are almost completely absent (5%) in LS-UC ($p < 0.00001$). Instead, all LS-UC exhibited a 5-methylcytosine deamination (CG>TG) and microsatellite instability driven mutation landscape, characterized by highly frequent ARID1A (82%), FGFR3 (80%), and KMT2D (78%) mutations, as well as preferential usage of CG>TG mutation hotspots. We propose that scarcity of TERT promoter mutations in LS-UC is due to inability to create the GABP binding motif 5′-GGAA through CG>TG mutation or microsatellite instability. Additionally, many mutation hotspots recurrently mutated in sporadic UC were not present in LS-UC.

Conclusion: Our findings establish LS-UC as a distinct disease entity with a unique genomic signature driven by constrained hypermutation. Our proposed explanation that TERT mutations are absent in LS-UC due to constrained hypermutation is supported by our discovery that other UC driver genes also exhibit an altered mutation landscape in LS-UC. These insights advance the understanding of LS-UC tumorigenesis and support the development of tailored diagnostic and therapeutic approaches for this patient population.

AS-4.052

Sexual Health in Cystectomy Patients: A Retrospective 10-Year Study at Haukeland University Hospital

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Introduction: The Norwegian government introduced a strategi on sexual health in 2017.One of its goals was to enhance healthcare workers` knowlegde about sexual health. This study aims to examine how frequently sexual health is discussed with patients both before undergoing cystectomy and during the first two follow-up appointmelts after surgery at Haukeland University Hospital during 2011 - 2021. A secondary objective is to determine wether discussions on sexual health have incerased in the later period (2017-2021) and wether there are differences based on gender.

Method: Medical records revealed 630 patients who underwent cystectomy at our institution between 2011-2021. Information on patient characteristics, surgical procedures and follow up-care was collected.

Results: Most patients were male (80% vs. 20% female). Mean age was 68 years (IQR 63-75). Preoperatively, discussions about sexual health are documented in 47% of cases.There is a significant increase in preoperative discussions about sexual health during the later period (2017-2021) compared to the earlier period (2011-2016) ($p = 0.009$).However, no significant difference is observed in discussions during the first postoperative follow-up between the two periods ($p = 0.09$).Sexual health was discussed with 52% of men, compared to only 27% of woman ($p = 0.001$). Postoperatively, a significant gender difference persists, with men being more likly to have these discussions ($p = 0.001$)

Conclusion: Since 2017, there has been an increasing focus on sexual health in patients undergoing cystectomy. However, men are more frequently provided with information about sexual health than women, both before and after surgery.

AS-4.053

Potential pathological advantages of En Bloc-resection of non-muscle invasive bladder tumours – a multinational randomised trial

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Introduction: En Bloc-resection (EBR) of non-muscle invasive bladder cancer (NMIBC) can potentially overcome some of the drawbacks of conventional transurethral resection of bladder tumours (cTURB), particularly regarding the pathological quality of the specimen.The aim of this study is to evaluate the pathological advantages of EBR compared with cTURB of NMIBC in terms of correct staging and grading.

Method: In this multinational randomised controlled trial, patients with suspected NMIBC tumours measuring 1-4 cm were randomised to either EBR or cTURB. A central pathology revision will be performed of all specimens, and the primary endpoint is the proportion of patients with unaltered T-stage following pathology revision compared with the initial pathology assessment.All results are analysed as intention to treat.

Results: As of March 2025, 96 specimens have been revised. 45 patients were randomised to EBR, 51 patients to cTURB.In the EBR group, 34 patients (76%, 95% CI: 60–87) had unaltered T-stage, compared to 40 patients (78%, 95% CI: 64–88) in the cTURB group ($p = 0.70$).The number of patients with unaltered malignancy grade was 34 (76%, 95% CI: 60–87) in the EBR group and 37 (73%, 95% CI: 58–84) in the cTURB group ($p = 0.70$).

Conclusion: In the preliminary data, we were not able to confirm our hypothesis that more patients in the EBR group would have unaltered T-stage and grade at revision compared to the cTURB group.We expect to present the complete dataset and analyses at NUF 2025.

AS-4.054

Calcium electroporation - an innovative and potentially minimally invasive treatment of urinary bladder tumors

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Introduction: Urinary bladder cancer remains a significant cause of morbidity and mortality and demands repeated treatments, lengthy follow-ups and limited options for patients unfit for cystectomy or radiotherapy.Calcium electroporation (CaEP), a novel modality, involves 1) injecting of calcium into the tumor, 2) brief electrical pulses that increase membrane permeability (electroporation), and 3) increases intracellular calcium killing malignant cells while relatively sparing the normal. CaEP is effective in the treatment of various cancers, but has never been tested on bladder tumors.The new

Opfield electrode developed by our group and compatible with the Olympus resectoscope makes electroporation in the bladder possible. The electrode has been tested in vitro and in vivo in healthy pigs. Next, we will evaluate the effect of different calcium concentrations. The first clinical study is planned to evaluate the safety and efficacy of CaEP in the treatment of human tumors.

Method: The clinical trial will assess CaEP in patients in palliative care due to muscle-invasive bladder cancer unfit for cystectomy or radiotherapy, or with recurrence of disease. Twenty patients will have CaEP and be evaluated every 3 months for safety and adverse events, tumor response, and progression by cystoscopy, biopsy and CT-scans. They will receive questionnaires for Quality of Life (QoL) and 10 patients will be subjected to qualitative interviews.

Results: The Opfield electrode was successfully tested in vivo in porcine bladders with safe and sufficient deliveries of electrical pulses. In vitro testing confirmed therapeutic deliveries of voltage and current for electroporation.

Conclusion: The study is the first to explore the effect of CaEP in urinary bladder tumors. The results could significantly impact the future treatment offering a minimally invasive, effective, and safe option. A randomized clinical trial comparing CaEP with the current treatment is planned; and CaEP might also be an option for patients currently left for palliative care.

AS-4.055

Detection and agreement of blood- and lymph vessel invasion assessed by immunohistochemistry in matched TURBT and radical cystectomy specimens.

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Introduction: Lymphovascular invasion (VI) in transurethral resection of bladder tumor (TURBT) usually assessed without immunohistochemistry (IHC) is associated with nodal metastases and reduced survival. Separation of blood (BVI) and lymph (LVI) vessel invasion by IHC in cystectomy (RC) suggests different prognostic trajectories and could guide management after TURBT. However, prevalence of BVI and LVI in TURBT and accuracy between TURBT and RC has not been thoroughly evaluated. We examined the prevalence of VI, BVI and LVI in TURBT using IHC, and investigated their agreement across matched TURBT and RC specimens.

Method: We reviewed TURBT specimens from 244 patients later treated with RC with respect to VI on routine sections. On one selected block for each case D2-40/CD31 antibodies were applied. Accuracy of VI status was assessed comparing the corresponding RC results. The differences across specimen types were assessed using McNemar´s test.

Results: In TURBT, more VI was detected with IHC (43% vs. 31%). The prevalences were 20% BVI and 31% LVI. BVI was associated with higher pathological stages on RC whereas LVI was associated with more nodal metastases. LVI showed good concordance. BVI showed low concordance overall but compared well in patients with MIBC and patients clinically assessed with non-organ confined disease.

Conclusion: Our findings indicate that IHC in TURBT is a reliable tool, enabling increased VI detection and showing concordance of VI status between TURBT and RC. IHC may hold an improved prognostic potential as differentiating of BVI and LVI could contribute to better risk stratification already at the time of TURBT.

AS-4.056

Blood vessel invasion assessed by immunohistochemistry relates to decreased survival in patients with bladder cancer treated with radical cystectomy.

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Introduction: Lymphovascular invasion (VI) is an established prognostic marker for many cancers including bladder cancer (BC). There is little data on whether lymphatic invasion (LVI) and blood vessel invasion (BVI) differ in prognostic significance. We aimed to examine LVI and BVI separately using immunohistochemistry (IHC) and investigate their associations with clinicopathological characteristics and prognosis. A secondary aim was to compare the use of IHC with assessing VI on routine stained sections.

Method: A retrospective series of 292 invasive BC treated with radical cystectomy (RC) with curative intent at Vestfold Hospital Trust, Norway were reviewed. Traditional histopathological markers and VI based on routine sections were recorded. D2-40/ CD 31 antibodies were applied on one selected tumor block for each case.

Results: The frequency of LVI and BVI was 32% and 28%. BVI was associated with higher pathological stages, positive regional lymph nodes and metastatic disease whereas LVI showed weaker or no associations. Both BVI and LVI independently predicted regional lymph node metastases. BVI, not LVI predicted higher pathological stages. BVI showed reduced recurrence free (RFS) and disease specific (DSS) survival in uni-and multivariable analyses, whereas LVI did not. Without IHC, VI was found in 31%. By IHC, 51% were positive, corresponding to a 64 % increased sensitivity in detecting VI. VI assessed without IHC was significantly associated with RFS and DSS in univariable but not multivariable analysis.

Conclusion: Our findings indicate that BVI is strongly associated with more aggressive tumor features. BVI was an independent

prognostic factor in contrast to LVI. Furthermore, IHC increases the sensitivity of detecting vessel invasion.

AS-4.057

The FINUC study: Treatment outcomes of patients diagnosed with NMIBC and MIBC in Helsinki University Hospital during 2010-2022

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Introduction: Bladder cancer is one of the most common cancers worldwide, with the majority of patients diagnosed with Non-Muscle-Invasive Bladder Cancer (NMIBC). Around 20% of patients are diagnosed with more advanced disease, Muscle-Invasive Bladder Cancer (MIBC). Early diagnosis with personalized treatment and follow-up is essential for a successful outcome. The aim of this study is to better understand treatment patterns of bladder cancer and to identify unmet clinical needs and outcomes.

Method: This retrospective non-interventional registry study was based on secondary use of hospital data lakes and national registry data for patients with NMIBC and MIBC diagnosed at Helsinki University Hospital in Finland during 2010-2022. Baseline characteristics and treatment patterns were analyzed using descriptive statistics, outcomes were analyzed using time-to-event methods and Kaplan-Meier curves.

Results: Of 2844 patients included in the NMIBC cohort, 630 (22.2 %) were women, mean age was 71.7 (SD: 11.1) years and 1712 (80.6%) had GFR≥60. The NMIBC risk group distribution was low 1185 (41.7%), intermediate 566 (19.9%) and high/very-high 743 (26.1%). A total of 976 (34.3%) patients received instillation treatment, of whom 684 (70.1%) were treated with bacillus Calmette-Guérin, and 140 (14.3%) were treated with mitomycin instillations. In the MIBC cohort, 1258 patients were included, 319 (25.4%) were women, the mean age was 73.6 (SD: 10.2) years and 584 (69.3%) had GFR≥60.

Conclusion: This real-world cohort of NMIBC and MIBC patients provides extensive information on clinical characteristics from southern Finland. These preliminary results on patient characteristics will be followed by a detailed description of treatment patterns and outcomes

AS-4.058

Cost analysis comparison between PICCLINE versus Port-a-Cath in patients with muscle invasive bladder cancer receiving neoadjuvant chemotherapy

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Introduction: Patients with muscle-invasive bladder cancer receiving neoadjuvant therapy may suffer from thromboembolic events (TEE) caused by their central venous access (CVA), with peripheral inserted central catheters (PICC) being associated with a higher risk of developing TEE in comparison to Port-a-Cath (PORT). The usage of PICC has increased during recent decades due to their alleged profitability. Our aim was to evaluate cost-efficiency between CVAs, comparing PICCs to PORTs.

Method: Spanning the years 2009 – 2021, data regarding CVA-usage between insertion to RC was retrospectively collected from radically cystectomized patients from six Swedish medical centers (all four regions of the Northern health care region [Västerbotten, Norrbotten, Västernorrland & Jämtland/Härjedalen], Gävleborg region and Västmanland region); including device implantations, maintenance, removal, and related complications. Exlusion criteria were a disseminated disease with other clinical staging than T2-T4aN0M0, resulting in a total of 375 patients eligible for analysis, of which 283 recived NAC.

Results: PICC had significantly higher costs than PORT with an additional cost of 8023 SEK (mean), (CI: 1032- 15014, p=0.025) which corresponds to 800 EUR in 2021. The mean cost for PICC was 17379 SEK (1733 EUR) per patient and 9347 SEK (932 EUR) for PORT. The highest mean expenses in the PICC-group were maintenance.

Conclusion: The conceptof PICCs as the cost-efficient choice should not be used as an indication for preferring PICCs over PORTs for NAC-treatment.

AS-4.059

Is muscle invasive bladder cancer detected earlier when a patient is treated with antithrombotic agents?

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Introduction: Urinary bladder cancer is a common form of cancer that is often first diagnosed when a patient discovers macroscopic haematuria and seeks healthcare. Sometimes there is a delay in the

primary diagnostic process when a patient using antithrombotic agents displays macroscopic haematuria, despite new guidelines pertaining to the principles of complete investigation in all macrohematuria-patients. Our aim was to examine if muscle invasive bladder cancer is detected at a less advanced stage or at a more advanced stage when a patient is using antithrombotic agents at the time of macroscopic haematuria.

Method: A cross-sectional retrospective study was carried out. The medical records of patients who had undergone radical cystectomy at four Swedish hospitals (the University Hospital of Umeå, Gävle County Hospital, the County Hospital of Sundsvall and Västerås Central Hospital) between 2008-2019 were assessed. Patients whose debut symptom was macroscopic haematuria were included (n=338) and stratified into two groups depending on use of antithrombotic agents. These two groups were compared by clinical T-staging and pathological N-staging.

Results: No significant association could be found between use of antithrombotic agents and clinical T-stage, nor between use of antithrombotic agents and pathological N-staging.

Conclusion: Further investigations are needed to clarify the role of antithrombotic agents in the timing of diagnosis in bladder cancer.

AS-5.060

Complications after continent reservoir surgery ad modum Lundiana

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Introduction: Urinary diversion with continent reservoir ad modum Lundiana was first performed at Haukeland University Hospital in 2011. The surgical procedure is encumbered with a comprehensive risk of adverse events. We aimed to study complications after surgery with Lundiana reservoir (LR) reconstruction.

Method: As part of a clinical audit, retrospective review of the medical records for patients operated with LR at Haukeland University Hospital 2011-2024 was performed. Outcomes of interest included patient characteristics, complications, and reoperations.

Results: In total, 58 LR procedures were performed in 34 women and 24 men, with a median age of 60 years (IQR 50-66). A malignant cause indicating surgery was present in 52 patients (86%). Median follow-up was 45 months (IQR 17-111).Six patients (10%) experienced intraoperative complications, all with malignant indication for surgery. Perioperative complications within 30 days occurred in 42 patients (72%). 36 patients (86%) had complications classified as Clavien-Dindo (CD) ≤2, while 6 (14 %) had CD ≥3. Five patients (9%) needed reoperation within 30 days.Late complications (30-90 days) occurred in 38 patients (67%). Infection and outlet leakage were the most common complications. Complications occurring >1 year after surgery were registered in 38 patients (66%). Infections and reservoir stones were most common.Late reoperation (>30 days) related to reservoir complications (stricture and treatment of reservoir stones) were performed in 21 patients (36%).

Conclusion: Complications related to Lundiana reservoir surgery are common. After 30 days the complications are related to the Lundiana reservoir, and they persist in many patients.

AS-5.061

Statin use is associated with elevated risk of benign prostatic hyperplasia

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Introduction: Hyperlipidemia associates with increased risk of benign prostatic hyperplasia (BPH), but the role of cholesterol-lowering medication remains unclear. We examine the risk of BPH by cholesterol-lowering medication and serum lipid levels in a large population-based cohort of Finnish men.

Method: A total of 74,754 men in the Finnish Randomized Study of Screening for Prostate Cancer (FinRSPC), without BPH at baseline (1996–1999), were linked to the national medication reimbursement database for information on cholesterol-lowering drug purchases. BPH diagnosis and procedures data was obtained from the national Care Register for Health Care, and for a subgroup of 16,065 men, information on serum lipid levels from the Fimlab Laboratories database. Cox regression adjusted for age, use of antihypertensive medication and non-steroidal anti-inflammatory drugs was used to analyze risks for BPH surgery, starting of BPH medication use and recorded BPH diagnosis, with cholesterol-lowering drug use and serum lipid level as time-dependent variables.

Results: 37,800 men (50.6%) had ever used statins, and 6,427 men (40.0%) with available serum lipid data had elevated total cholesterol levels. Statin users had an increased risk for starting BPH medication compared to non-users, and lipophilic statin use was associated with elevated risks for all three BPH endpoints. For overall statin use, increased risks for BPH diagnosis and surgery were observed up to 5-year time lag. Elevated triglycerides were associated with a decreased risk for starting BPH medication, while lower HDL levels were linked to an elevated risk for BPH diagnosis. No significant associations between LDL levels and BPH risk were observed.

Conclusion: Statin use is associated with an increased long-term risk for clinical BPH, particularly when adjusted for total cholesterol level. Cholesterol level does not seem to associate independently with BPH risk. Men prescribed statins for cholesterol control should be regularly evaluated for BPH symptoms.

AS-5.062

Prospective validation of classification of intraoperative adverse events (EAUiaiC) in a urological department

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Introduction: Intraoperative adverse events (IAEs) are unwanted and unplanned events during an operation. Validated systems for evaluating IAEs are needed. The EAUiaiC questionnaire was developed to monitor and compare the quality of surgical procedures across departments. It is composed of eight grades ranging between grade 0 (no complications) to 5b (wrong surgery site, no consent or intraoperative death).

Method: The EAUiaiC questionnaire is applied to all surgical procedures at the Department of Urology, Odense University Hospital to investigate and report the incidence of intraoperative complications.A prospective study, from 27th of marts 2023 to 14th of October 2023, was conducted with collection of the EAUiaiC questionnaire.All procedures were recorded and graded according to the questionnaire. Categorial parameters analyzed using the chi square test (p-value<0.05). For the numerical variables, data was described by interquartile range (IQR) and mean with standard deviation (SD).

Results: A total of 1356 procedures were performed: 266 open surgeries, 54 laparoscopies, 223 robot assisted surgeries and 813 transurethral surgeries. The IAE rate was 2.6 %. We recorded 31 grade 1 IAEs, two grade 2, one grade 4b (instrument failure) and one grade 5a (wrong surgery site). No grade 3 IAEs occured. The IAEs was not correlated with procedure type (P=0,82) or age ≥70 years (P=0,21). IAEs were not statistically associated with sex, malignancy or surgeon position.

Conclusion: We found a low rate of peroperatively complications at the department, with no significant difference between IAEs and the procedures. Further evaluation of IAEs is ongoing.

AS-5.063

Patient Reported Long-Term Symptom Burden and Quality of Life After ATOMS™ Surgery for Post-Prostatectomy Incontinence

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Introduction: In men with post prostatectomy incontinence (PPI), surgery can be indicated. However, subjective outcomes over time, particularly for the Adjustable Transobturator Male System (ATOMS™), remain underreported. Our objective was to evaluate symptom burden, perceived improvement and quality of life at long- term follow-up.

Method: All men with PPI who had undergone ATOMS™ surgery between 2012-2023 at a tertiary centre were eligible (REK2024/726791). They were invited to complete questionnaires including Expanded Prostate Cancer Index Composite Short Form (EPIC-26), Patients` Global Impression of Change (PGI-C) scale and RAND-12. Response rate was 83% and 83 patients were included in the final sample.

Results: The median age was 75 years (IQR 70-78) and the median time since ATOMS™ surgery was 87 months (IQR 59-111). 66% of the study sample reported global improvement. Mental health scores were higher in patients with perceived improvement (75 vs 68, p=0.3) as was physical health (71 vs 58, p<0.04). A positive correlation was found between the RAND-12 mental and physical health domains and the EPIC-26 incontinence domain summary score (r =0.40, p< 0.001). EPIC-26 incontinence domain summary scores were lower if the patient had undergone radiotherapy (p=0.006). Compared to reference data in Norway, men who underwent ATOMS™ surgery showed no significant difference in health-related quality of life (HRQoL), as measured by the RAND-12.

Conclusion: The majority of patients report improvement as a result ATOMS™ surgery. HRQoL scores at long term follow-up are similar to the general population.

AS-5.064

Results of aspiration sclerotherapy in adult hydrocele and spermatocele in Helsinki metropolitan area

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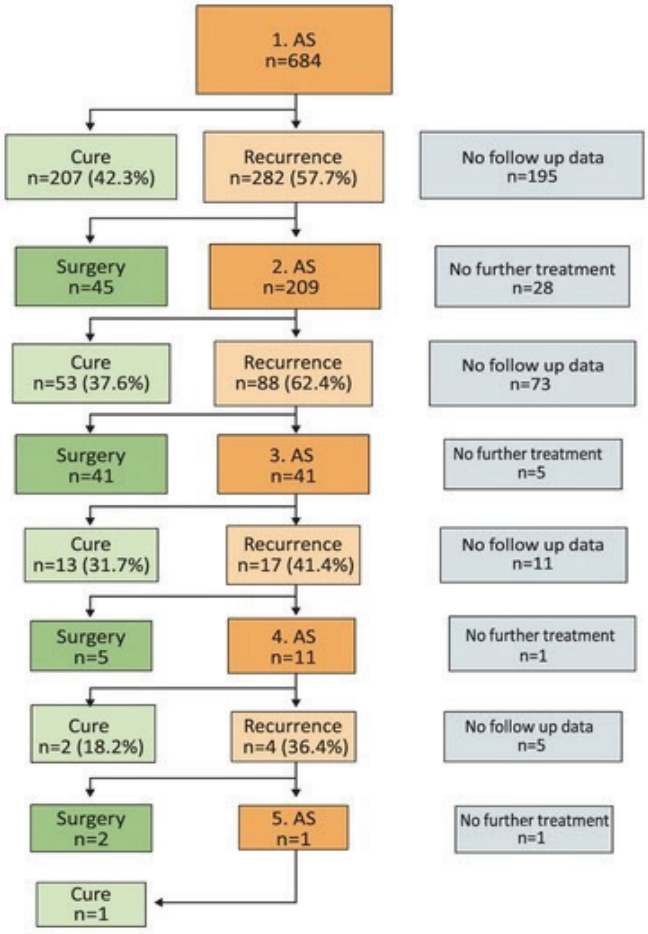
Introduction: Aspiration sclerotherapy (AS) is a minimally invasive and potentially cost-effective treatment for hydrocele and spermatocele, but data on safety and efficacy remain limited, with studies involving small patient samples. We aimed to assess complications and cure rates in a large patient cohort.

Method: We retrospectively reviewed all AS procedures performed in Helsinki Metropolitan Area hospitals (2010–2020). Outcomes were 1) 90-day complications (Clavien-Dindo (CD) grading) and 2) AS cure rate. For the outcome estimates we used the Wilson score, with 95% confidence interwall (95%CI).

Results: We identified 956 AS procedures in 684 patients (median age 67, IQR 55–74) with a median follow-up of 63 months (IQR 42–87). Most procedures (92%) were for hydrocele. Median aspirated fluid volume was 200 ml (IQR 120–300); 97% used polidocanol.One AS procedure sufficed for 68% of patients, while 25% required two and 6% three or more. Moderate or severe (CD II–III) complications occurred in 3.2% (95% CI 2.3–4.6%) of cases, with

0.9% requiring urgent surgery. Complications included infection, hematoma, and/or seroma.Cure rates were 42% (95% CI 38–47%) after one treatment, 38% (95% CI 30–46%) after two, and 43% (95% CI 26–62%) after three or more. Of the 400 patients with follow-up data after the last AS, 270 (67%; 95% CI 62.3–71.7%) reported self-assessed cure. A total of 93 (14%, 95%CI 11-16%) patients were operated after unsuccessful AS. The patient flow on cure, re-treatment and lost to follow up is presented in figure 1.

Conclusion: AS is a safe treatment for hydrocele and spermatocele with a low complication rate. However, multiple treatments are often needed, and surgery may be required. Study limitations include retrospective design and loss to follow-up.



AS-5.065

The Economic and Capacity Impact of Increased Surgical Treatment Options for Patients with Benign Prostatic Enlargement in Four Nordic Countries

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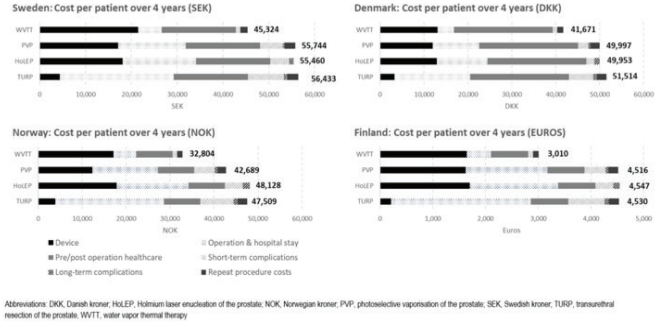
Introduction: With a rising population of patients experiencing LUTS secondary to BPE in the Nordics and the challenges public hospitals face with surgical capacity, considering innovative surgical treatment options that allow for shorter operating times and reduced hospital stays is essential. This analysis reports the economic and capacity impact of different surgical treatments for benign prostatic enlargement (BPE) in Sweden, Norway, Denmark and Finland.

Method: A cohort simulation model compares four-year treatment costs and capacity impact, including hospital bed-days and operating time, with Transurethral Resection of the Prostate (TURP), Holmium Laser Enucleation of the Prostate (HoLEP) using MOSES™ Technology, photoselective vaporisation of the prostate (PVP) and Water Vapour Thermotherapy (WVTT). We report the capacity and economic impact of a scenario, where the proportion of TURP is reduced to 50% and HoLEP, PVP and WVTT proportions are increased from a healthcare payer perspective and per patient.

Results: Reducing the proportion of TURP procedures to 50% and expanding the BPE surgical options could release 590 bed days and 2.281 operating theatre hours in Sweden, 267 bed days and 1.032 operating theatre hours in Norway, 343 bed days and 1.248 operating theatre hours in Denmark, 576 bed days and 1.181 operating theatre hours in Finland each year. This change could offer potential cost savings to the local healthcare systems of 15.173.338 SEK, 9.663.841 NOK, 8.894.422 DKK and 980.472 €, in Sweden, Norway, Denmark and Finland respectively, corresponding to an annual reduction of cost by 1,92%, 3,27%, 2,12% and 2,85%.

Conclusion: Expanding the surgical care options for patients with BPE in the Nordics may free up theatre time and hospital bed-days, in addition to creating meaningful cost-savings, which offset higher initial device cost. In Sweden, Norway, Denmark and Finland, economic considerations should not constitute a barrier to providing increased BPE surgical options and enabling patient-centric surgical care.

Figure 1: Cost per patient over 4 years in 4 Nordic countries



Abbreviations: DKK, Danish kroner; HoLEP, Holmium laser enucleation of the prostate; NOK, Norwegian kroner; PVP, photoselective vaporisation of the prostate; SEK, Swedish kroner; TURP, transurethral resection of the prostate; WVTT, water vapor thermal therapy

AS-5.066

TURP in the Extreme Elderly (≥ 85 years): Balancing Success, Safety, and Survival

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Introduction: There are few studies evaluating the outcomes associated with transurethral resection of the prostate (TURP) in extremely elderly men. Our objective was to assess the safety and efficacy of this procedure in this special population.

Method: As part of an ethically approved study, retrospective review was carried out of all patients who underwent TURP between 2014-2023 at a tertiary centre. Inclusion criteria were patients aged ≥85 years. Data was collected on demographics including American Society of Anaesthesiologists (ASA) score, Charlson Comorbidity Index (CCI), frailty status, operative data and complications (according to the Clavien-Dindo (CD) system). Treatment success was defined as catheter free status.

Results: Over the study period, 194 patients (median age 87 years, IQR 86-89) underwent TURP. The majority (68%) were ASA 3. 28% received home nursing assistance or were nursing home residents at the time of surgery. Median CCI score was 2 (IQR 1-3). 66% used anticoagulant medication. 62% had an indwelling catheter preoperatively. 97% received spinal anaesthesia and median operative time was 63 minutes (IQR 39-88). The intra-operative complication rate was 2.6%. The 30-day complication rate was 41% (CD 1-2: 36%, CD ≥3: 5%). 90% of the sample were catheter free at their scheduled follow up. Overall, 93% were still alive at 1-year post surgery.

Conclusion: Treatment success for TURP in extremely elderly men (≥85 years) is high, but the associated morbidity burden warrants the need for an individualised approach when considering men in this special population who are potential candidates for surgery.

AS-5.067

Validation of a Swedish version of the National Institute of Health - Chronic Prostatitis Symptom Index

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Introduction: Chronic primary prostate pain syndrome (PPPS), earlier known as chronic prostatitis, affects approximately 10% of all men. Specifically for this patient category the National Institute of Health-Chronic Prostatitis Symptom Index (NIH-CPSI) was developed. The aim of this study was to translate the NIH-CPSI into Swedish, including cross cultural modifications and testing it for validity and reliability.

Method: Fifty men with chronic PPPS took part in the testing of a new Swedish questionnaire. The process followed existing guidelines by performing a forward and backward translation, thereafter, reviewed and discussed by an expert committee. The initial Swedish translation was assessed for face validity and test-retest reliability. In all steps of the process both medical expertise and laymen participated.

Results: The Swedish translation showed a high degree of conformity with the original version. In unison a few cultural modifications were agreed upon. The questionnaire was assessed to be clear to understand and having good face validity. The test-retest reliability showed an intraclass correlation (ICC) of 0.89 (95% CI = 0.82-0.94) which indicates good to excellent reliability. The standard error of measurement and minimal detectable change were 2.5 and 7.0 respectively. A Bland Altman plot showed no systematic difference between test-retest.

Conclusion: This study brings a valid and reliable Swedish version of the internationally recognized NIH-CPSI questionnaire, a contribution to care and evaluation of these men in Sweden.

AS-5.068

The value of computed tomography in patients with acute flank pain

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Introduction: The value of computed tomography (CT) in patients with acute flank pain is controversial. We aimed to study the diagnostic value and therapeutic impact of CT in these patients.

Method: A retrospective review of the medical records for patients referred to Department of Urology Haukeland University Hospital with a diagnosis of acute flank pain in the period June 2023 – June 2024, was performed. After excluding 156 patients with a confirmed cause of flank pain already prior to referral, 289 patients with 319 referrals were enrolled in the study.

Results: In total, 142 women and 147 men, with a median age of 48 years (IQR: 35 - 60) were registered. Acute CT was performed in 195 cases (61%), and a cause for the flank pain was determined in 155 (80%). A ureteral stone was detected in 117. Acute URS was performed in 45 of these (38%), while 27 (37%) were drained with a JJ-stent or nephrostomy tube only.Irrespective of the cause for acute flank pain, 227 patients (71%) received conservative treatment only. Patients needing intervention for ureteral stones had higher levels of creatinine (110 vs 87, $p < 0.001$) and CRP (56 vs 15, $p < 0.001$) compared to patients treated conservatively. Furthermore, hospital stay was longer in patients having acute CT (2 days)

compared to those where omitted (0 days), p < 0.001.216 patients (68%) had CT at follow-up after 3-4 weeks. A persistent ureteral stone needing ureteroscopy was registered in 40.

Conclusion: Acute CT in patients with colic flank pain may be confined to complicated cases with signs of infection, elevated CRP and creatinine levels. CT in uncomplicated cases may be safely deferred to follow-up.

AS-5.069

Diagnostic imaging in outpatients with acute flank pain

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Introduction: The necessity of acute computed tomography (CT) in patients with acute flank pain is debated. We therefore wanted to study the diagnostic value of CT in patients referred with uncomplicated acute flank pain.

Method: As part of a clinical audit, a retrospective review of the medical records was performed for patients referred to Department of Urology Haukeland University Hospital during the period of June 2023 – June 2024 and a diagnose of acute flank pain. In total, 289 patients with 319 referrals were registered. In this part of the review, we have studied the patients with uncomplicated acute flank pain being discharged from the emergency department the same day.

Results: In total, 112 hospital visits in 106 patients were registered. There were 60 women and 46 men, with a median age of 42 years (IQR: 33 - 54). 56 patients (50%) had typical colic pain, while 44 (39%) had insufficient description of pain characteristics in their medical records. A urine dipstick test was done in 94 patients (84%) and microhaematuria was present in 71 (76%). Ten patients underwent acute CT, and a ureteral stone was detected in three. No patients needed emergency ureteroscopy or drainage. In total, 16 patients (14%) needed readmission, three of these due to infection and the remaing because of pain. CT at follow-up 3-4 weeks later was performed in 83 patients (74%), and a persistent ureteral stone needing ureteroscopy was registered in ten. A negative CT at follow-up was registered in 58 (70%).

Conclusion: Acute CT in uncomplicated colic flank pain does not seem necessary and can be postponed to follow-up after 3-4 weeks. This may cause a swifter treatment course for patients in the emergency ward. Focus on complete clinical investigation may also aid deciding which patients needing further diagnostic imaging.

AS-5.070

A multicentre randomised controlled trial assessing the efficacy of antimicrobial prophylaxis for extracorporeal shock wave lithotripsy in reducing urinary tract infection (APPEAL)

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Introduction: Shock wave lithotripsy (SWL), a widely used treatment for urolithiasis, carries a risk of post-procedural infections. Clinicians use antibiotic prophylaxis variably, and international guidelines provide conflicting recommendations; both reflect current low-certainty evidence. We studied whether single-dose prophylaxis reduces bacteriuria and post-SWL urinary tract infections (UTIs).

Method: APPEAL, a multicentre, blinded trial across 12 centres in nine countries, randomised adults undergoing SWL for urolithiasis to a single dose of ciprofloxacin or placebo. The primary outcome

was a composite of bacteriuria or symptomatic UTI (symptomatic UTI defined as symptomatic cystitis, pyelonephritis or urosepsis) within approximately 7-14 days post-SWL. Other outcomes included pyelonephritis or urosepsis.

Results: Of the 1,722 randomised patients, 28 underwent post-randomisation exclusions (mostly due to non-visualisable stones). Among the analysis population (n=1,694; mean age 50 years; 30% female; 74% with kidney stones and 26% with ureteral stones; 11% with ureteral stent), 10% were lost to follow-up. Bacteriuria or symptomatic UTI occurred in 20 (2.7%) in the ciprofloxacin group and in 30 (3.9%) in the placebo group (RR 0.68, 95% CI 0.41 to 1.15). Symptomatic UTI occurred in 10 (1.3%) in the ciprofloxacin group and in 21 (2.7%) in the placebo group (RR 0.49; 95% CI 0.19-1.23). No (0.0%) patients in the ciprofloxacin group and nine (1.2 %) in the placebo group developed pyelonephritis or urosepsis (RR 0.05; 95% CI 0.003-0.93). Two patients (0.2%) in the ciprofloxacin group developed allergic reactions during infusion. No other notable adverse events occurred.

Conclusion: A single dose of ciprofloxacin likely reduces post-SWL infections. The patient-importance of this reduction depends on individual preferences, weighing small absolute risk reductions against potential harms and wider implications of antibiotic use. The APPEAL trial will inform global practice and support evidence-based decision-making for patients undergoing SWL.

Table. Study outcomes

Outcomes	Ciprofloxacin	Placebo	Risk ratio (95% CI)[a]	Absolute risk difference, % (95% CI)[b]	P value
Primary outcome					
Bacteriuria or UTI	20 / 748 (2.7%)	30 / 770 (3.9%)	0.68 (0.41 - 1.15)	-1.3 (-3.0 - 0.38)	0.13
Secondary outcome					
Symptomatic UTI	10 / 748 (1.3%)	21 / 769 (2.7%)	0.49 (0.19 - 1.23)	-1.6 (-3.0 - 0.44)	0.12
Tertiary outcomes					
Bacteriuria	20 / 748 (2.7%)	29 / 770 (3.8%)	0.71 (0.43 - 1.16)	-1.1 (-2.7 - 0.44)	0.16
Symptomatic cystitis	10 / 748 (1.3%)	20 / 769 (2.6%)	0.51 (0.22 - 1.21)	-1.5 (-3.3 - 0.28)	0.11
Pyelonephritis or urosepsis[c]	0 / 748 (0.0%)	9 / 769 (1.2%)	0.05 (0.003 - 0.91)	-1.2 (-2.2 - -0.42)	0.003

[a] Risk ratio modelled using Poisson generalised estimation equation (GEE) and p-values based on risk ratio analysis.
[b] Absolute risk difference modelled using binomial GEE.
[c] Risk ratio estimated by adding 0.5 and absolute risk difference using the Wilson score method.

AS-5.071

Increasing Incidence of Infected Kidney Stones Requiring JJ Stent or Nephrostomy in Iceland (2013–2023): A Nationwide Retrospective Study.

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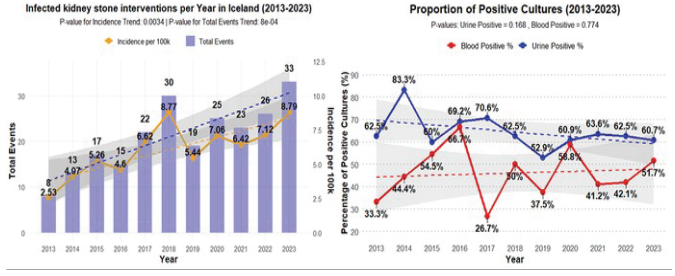
Introduction: Kidney stone incidence is increasing worldwide, likely affecting admission rates for stone related infections. The incidence of kidney stone-related infections requiring decompression in Iceland is unknown. This study examines trends, microbiology, and clinical outcomes over the past decade.

Method: Data was obtained from Landspítali Hospital and Akureyri Hospital and included all nephrostomy and JJ stent insertions for kidney stones in Iceland (2013–2023). A manual review of 1,595 cases identified 231 patients (13.5%) with SIRS. Clinical, microbiological, and outcome data were analyzed.

Results: Total urgent decompression interventions for kidney stones rose 181% (81 to 228 cases/year), while procedures specifically for infected stones increased 357% (8 to 33 cases/year), with incidence rising from 2.53 to 8.79 per 100.000 persons/year (p=0.003). Despite the rise in infections, age (p=0.234),stone size (p = 0.19), time to intervention (p = 0.34), and hospital stay (p = 0.52) showed no significant trends. Urine (p = 0.168) and blood culture positivity (p = 0.774) remained stable, with E. coli as the most common pathogen, found in 62.8% of postive urine cultures and 53.8% of bloodstream infections. Stone laterality trended towards proportional increase in left sided stones (p=0.07).ICU admission was required in 15.2% of infected cases, thereof 34% for those with bloodstream infections.

Conclusion: The >300% increase in infected kidney stones and related interventions over the past decade signals a major shift in disease burden, yet the underlying cause remains unknown. Among patients with SIRS due to stones, 15.2% required ICU admission, highlighting the severity and clinical impact of these infections.



AS-5.072

Rare but Relevant: Clinical Insights into Zinner Syndrome from Western Norway

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Introduction: Zinner syndrome (ZS) is characterised by unilateral renal agenesis, ipsilateral seminal vesicle cyst and obstruction of the ejaculatory duct. The literature is mostly limited to case reports only and the condition is poorly understood. Our objective was to report on cases of ZS that have been managed at two centers in order to identify any further clinical insights on this condition.

Method: Retrospective review was performed of ZS cases that had presented to two centers in Western Norway between January 2021 and June 2024. Data was collected on demographic details, symptomology, imaging results, management and fertility. Consent for participation was gained from each patient.

Results: Over a three-year period, six cases of ZS were identified, with the age at diagnosis ranging from 18 to 70 years. Five of the six patients were symptomatic at presentation, all of whom were under 50 years old. Symptoms included anejaculation and testicular pain during sexual activity. Two patients presented as an emergency (acute urinary retention and pelvic pain). Not all cases required surgical intervention, with a conservative approach being successfully implemented in half of the patients. Two thirds of the series had children, either via natural conception or via assisted reproductive methods. The remainder underwent sperm cryopreservation.

Conclusion: ZS can display varied symptomology and age at presentation. Not all symptomatic cases will necessarily require surgical intervention. Management should be determined on a case-by-case basis and a conservative approach can also be feasible in select cases.

AS-5.073

Do distal ureter stones cause lower urinary tract symptoms (LUTS)? An analysis from the pragmatic APPEAL trial

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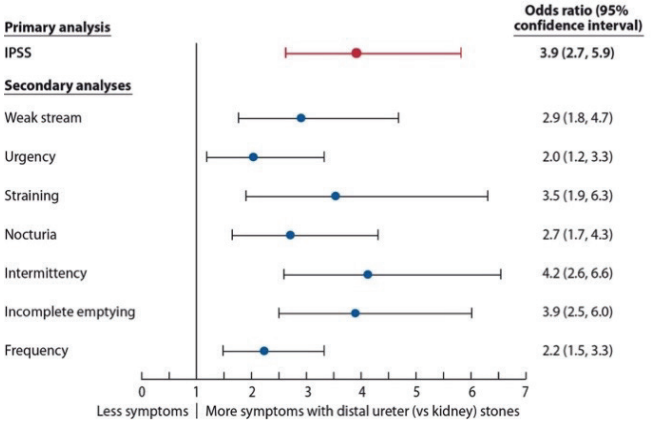
Introduction: Guidelines recognize distal ureteric stones as a potential cause of LUTS. There are, however, no studies directly exploring whether distal ureteric stones cause LUTS. As part of a large pragmatic trial, we evaluated the effect of stone location on LUTS.

Method: The APPEAL trial was a large, international, pragmatic trial assessing the effectiveness of preprocedural ciprofloxacin vs placebo in patients undergoing shock wave lithotripsy (SWL) for urolithiasis. Pre-SWL, we assessed urinary symptoms using the IPSS questionnaire, and classified patients having LUTS (IPSS score $\geq$8) or not (<8). For individual symptoms, we classified patients having the symptom (score 3-5) or not (0-2). We performed a multivariable logistic regression to assess the impact of stone location (distal ureter vs. kidney) on overall IPSS score and individual symptoms. Covariates included age, sex, obesity, BPH, ureteral stent, and diabetes. We determined whether effect of stone location differed with presence or absence of ureteral stents.

Results: After exclusion of 219 patients with middle ureter, 70 with proximal ureter and 12 with multiple stone locations, we included 1,369 patients (median age 49; 31% female) with full information on stone location and LUTS. Of these, 1,235 (90.2%) had kidney stones, 134 (9.8%) had distal ureter stones and 416 (30.4%) had LUTS. Of the 134 patients with distal ureter stones, 73 (54.5%) had LUTS as did 343 (27.8%) of the 1,235 with kidney stones. In the multivariable analysis, patients with distal ureter stones vs those with kidney stones demonstrated an odds ratio of 3.9 (95%CI 2.7-5.9) of reporting LUTS. Patients with distal ureter stones proved more likely to report each individual IPSS symptom (Figure). Subgroup analysis found no interaction between stone location and presence of ureteral stent (p for interaction 0.12).

Conclusion: Our study provides compelling evidence that distal ureter stones represent one of the causes of moderate or severe LUTS.

Figure. Odds ratios for having LUTS by urinary stone location between patients with distal ureter and kidney stones (reference).
In the primary analysis, we classified patients as having LUTS (IPSS score ≥8) or not having (<8).
In the secondary analyses, we classified patients as having the symptom (score 3-5) or not having (score 0-2).



AS-5.074

Elective or Emergency? The Story of Nephrostomy Tube Exchanges and Outcomes

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Introduction: Percutaneous nephrostomies often require unplanned exchanges; however, the patient characteristics associated with this risk remain unclear. This study aimed to assess the frequency of emergency exchanges and identify potential risk factors.

Method: Retrospective review was conducted on all nephrostomy exchanges performed at a tertiary center between January 2021 and October 2024. Inclusion criteria covered all patients undergoing nephrostomy exchange, primarily those planned for long-term management with elective exchanges every 90 days.

Results: A total of 108 patients were included in the study, with a median age of 78 years (IQR 68–85). The median Age-Adjusted Charlson Comorbidity Index (ACCI) was 7 (IQR 5–9), and 44% were classified as frail according to the Rockwood Scale. 57% were fully independent, while 9% had cognitive impairment. At 90 days, 56% of nephrostomies remained in-situ. Probability of patency at 30 days and 60 days was 70% and 62%, respectively. Common reasons for emergency exchange were partial dislodgement (48%), complete displacement (28%), and blockage (12%). Multivariable logistic regression identified cognitive impairment as a significant predictor of an emergency exchange ($p = 0.038$, OR 4.8, 95% CI 1.1–21.0), while age, gender, and frailty were not associated risk factors. Multivariable cox regression revealed that cognitive impairment was also associated with shorter patency time ($p = 0.01$, HR 3.1, 95% CI 1.3–7.2).

Conclusion: Emergency nephrostomy exchange is common. Cognitive impairment was associated with higher likelihood of this occurring as well as shorter patency time.

AS-5.075

Perioperativ Results Following Implementation of TUEP in Vestfold

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Introduction: Bipolar transurethral enucleation of the prostate (TUEP) was introduced in Tønsberg Hospital in 2018 as an alternative to traditional TURP and trans vesical prostatectomy (TVP). We performed a follow up study to evaluate if an increase in resected tissue per minute – resection pace, was achieved with experience after implementation.

Method: Patients operated with TUEP were identified based on coding in the hospital's operation protocol during the period 2018 - 2023. Information on pre- and perioperative data were extracted from the medical journal of each patient. Resection pace was defined as resected tissue (grams) per minute, and resection ratio as resected volume relative to the preoperative estimated prostate volume in percent.

Results: 199 patients were operated during the period: 44 in 2018-2020 (1st period), 109 in 2021-2022 (2nd period) and 49 in 2023 (3rd period). The median resected volume was 40, 52 and 51 grams. Resection pace was 0,47, 0,73 and 0,75 g/min, and resection ratio was 52,0 %, 57,8 % and 59,3 % in the 1st, 2nd, and 3rd period respectively. In the last period resection pace and resection ratio for prostates with estimated volume >100 ml (median 114g) was 0,92 g/min and 71 % compared to 0,73 g/min and 58 % for prostates <100ml (median 78g).

Conclusion: Both resection pace and resection ratio were increasing with increasing experience for the surgeon. The rise in resection pace and resection ration was highest between the first two periods. Both parameters were increasing with increasing size of the prostate.

AS-5.076

What is chronic urinary tract infection - A systematic review

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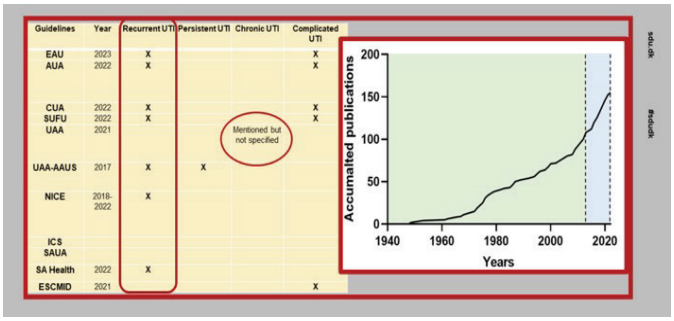
Introduction: Urinary tract infection is a common disease frequently associated with recurrent episodes. The high number of relapsing infections has led some clinicians, researchers, and patients to adopt the term "chronic urinary tract infection". However, the term remains undefined, making its use in clinical practice

challenging."This systematic review aims to examine the definition and usage of the term "chronic urinary tract infection" in scientific publications.

Method: We systematically searched Medline and Embase for studies covering all aspects of human urinary tract infection. For comparison, current urological and infectious disease guidelines were also reviewed.The method was designed and planned according to the PRISMA protocol guidelines. The protocol was appropriately registered with PROSPERO International Prospective Register of Systematic Reviews.

Results: The electronic search resulted in 2175 publications, of which 154 articles were eventually included for data extraction. Six studies, accounting for less than 4%, presented a definition of chronic urinary tract infection within the text. The definitions were highly incongruent between studies and often identical to the current definition of recurrent urinary tract infection. From 2009 to 2022, the use of "chronic urinary tract infection" in published articles increased, with an average of 5.6 articles per year compared to 1.4 in the preceding period (1948-2008).One guideline related to catheter-associated infection mentioned chronic urinary tract infection. Seven guidelines define recurrent urinary tract infections.

Conclusion: Chronic urinary tract infection is a loosely defined term that has gained increasing usage over the past 15 years. However, chronic urinary tract infection does not represent a distinct clinical or microbiological condition that warrants its recognition as a medical diagnosis.



AS-5.077

Intravesical Gentamicin Instillation for Recurrent Urinary Tract Infections

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Introduction: The treatment of recurrent urinary tract infections (rUTI) is increasingly complicated due to rising antibiotic resistance, posing a significant socioeconomic burden for both patients and society. The aim of this observational study is to assess the effectiveness and feasibility of intravesical gentamicin for complicated rUTIs as an alternative to systemic antibiotic treatment.

Method: From May 2022 to March 2025, 21 patients with complicated rUTI started a 3-month treatment regimen with intravesical gentamicin (40 mL, 1 mg/mL) at a single tertiary center. Patients who were able to do the clean intermittent catheterization (CIC) performed daily instillations at home. Those unable to perform CIC received instillations once a week for four weeks, followed by biweekly instillations for eight weeks at the outpatient clinic. The follow-up period was one year after end of treatment. We monitored recurrence through urine culture upon urinary symptoms, assessed side effects, and evaluated feasibility through consultations.

Results: The male-to-female ratio was 1:2, with a median age of 65 (36-83). Sixteen patients (76%) performed CIC throughout treatment, and five (24%) received treatment at an outpatient clinic. At data assessment time, thirteen patients had ended the follow-up period. Altogether, the patients had a median 44% [27%–55%] decrease in UTIs per year from before treatment to the 1-year follow-up. 11 out of 13 (84,6%) patients experienced a reduction in yearly UTIs. Among the 11, 10 performed CIC, and one received outpatient treatment. One patient had no change, and one patient had increased UTIs (both were in the CIC group). No reported adverse events.

Conclusion: In this group of patients with complicated rUTIs, intravesical gentamicin was effective in reducing the recurrence rate of UTIs and was also found to be feasible and safe. Though preliminary results are promising, more in-depth analysis is necessary to assert the actual effects of intravesical gentamicin instillations on complicated rUTI.

AS-5.078

A prospective randomized pilot study to evaluate the safety of the novel LubriShield™ Foley catheter; A permanent safe coating of an indwelling urinary catheter

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Introduction: Catheter-associated urinary tract infections (CAUTIs) are a common healthcare-associated infection and result from the colonization by biofilm-forming bacteria. Biofilm presents a significant clinical challenge, leading to antibiotic resistance and treatment failures. We report on the novel LubriShield™ Foley catheter, which is coated with a proprietary hydrogel. The coating is based on a superhydrophilic surface and a covalently bonded anti-fouling ligand. Preclinical studies demonstrated a persistent coating that creates an effective local anti-fouling environment, in which uropathogenic bacteria are inhibited from forming biofilm. The coating demonstrated a 28-fold reduction in surface friction compared to

an uncoated catheter. The aim of the study was to assess the safety of the novel catheter.

Method: A prospective single-center randomized study was conducted to assess the safety of a coated catheter compared to an uncoated catheter in patients undergoing transurethral resection of the bladder. We included 30 patients who were randomly assigned to either a standard catheter or the novel LubriShield™ catheter. Urinary cultures were analyzed both pre- and post-catheterization. The duration of catheterization for the patients ranged from 3 to 24 hours. Primary Outcome: Device-specific adverse event assessmentsSecondary Outcome: Pain, irritation, and discomfort measured using the Numeric rating scale (NRS) (1-10) through a questionnaire.

Results: No serious adverse events (SAEs) or adverse events (AEs) were observed with the coated catheters. There was no difference in urinary cultures. Both the patients and the users rated NRS equally between the catheters.

Conclusion: The novel coated catheter - the LubriShield™ Foley catheter - is safe to use

AS-5.079

Use of prophylactic antibiotics in routine nephrostomy catheter exchange – A Nordic multicenter survey

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Introduction: Percutaneous nephrostomy (PCN) is a standard procedure for treating upper urinary tract obstructions. It is associated with bacteriuria, which increases the risk of urinary tract infections and sepsis. Research regarding prophylactic antibiotics before changing nephrostomy catheters is limited, resulting in a general lack of evidence-based guidelines. This study aimed to investigate urologists' approaches to prophylactic antibiotics in routine change of nephrostomy catheter in the Nordic countries.

Method: A cross-sectional questionnaire survey was conducted using two different collecting methods. All Nordic countries were invited through the urological departments. The questionnaire was electronically distributed and remained open for responses for 14 days. Additionally, it was distributed at two Nordic urological conferences via a QR code. The questionnaire addressed the urologist's experience with PCN patients, the volume of patients, the responsibility for the catheter exchange, prescription and administration methods of prophylactic antibiotics, guidelines, etc. The inclusion period was from April to September 2024. Inclusion criteria were being an attending or resident at a department of urology.

Results: Urologists from Denmark, Norway, Sweden, and Finland were included. The electronically distributed questionnaires had a 55% (24/44) response rate, and 25 responded via QR Code, generating a sample of 49 respondents. 82% (40/49) reported that patients with PCN received prophylactic antibiotics before routine catheter exchanges. However, major national and

international variations were found (Table 1). Local prophylactic antibiotics were given based on a urine guidelines reported being available by 35%. The culture in 43% (17/40) of the cases and as empirical treatment 40% (16/40) of the time (Table 1).

Conclusion: This study found variations in the approach to prophylactic antibiotics among urologists in the Nordic countries. It emphasizes the need for further research into tailored guidelines for PCN use, mainly focusing on whether all patients or only specific subgroups should receive antibiotic prophylaxis, which could promote antimicrobial stewardship.

AS-6.080

Evaluating Female Urinary Catheterization (UC): Nurses Insights on Challenges and Institutional Support

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Introduction: Female UC is often considered routine, yet underlying challenges and procedural gaps make it more complex in practice. This study uses nurse insights to uncover overlooked aspects of UC.

Method: UC experience was surveyed in 53 nurses (Norway, Denmark); correlations were analyzed.

Results: Most nurses report an average UC duration of 5-10 min (54.7%), with 20% up to 15 min. In difficult cases, 47% take up to 20 min, and 25% exceed it. The absence of standardized protocols may contribute to this variability, e.g., waiting time for anesthetic gel effect ranges from under a minute (30.2%) to 3-5 min (26.4%), highlighting procedural inconsistency. Nearly half of the nurses reported no protocol for difficult catheterizations, despite 77.4% feeling adequately trained. Well-trained nurses were less likely to report such a protocol (r=-0.221), suggesting that confidence does not ensure awareness of specific institutional

guidelines or adherence. 'Not sure' responses (47.2%) further indicate that even when protocols exist, they

may not be effectively implemented. Weighted experience (years in practice × catheterization frequency) correlated weakly with first-attempt success (r=0.018) but strongly with speed (r=0.424) and perceived training adequacy (r=0.428). Training adequacy also showed a moderate correlation with first-attempt success (r=0.296), emphasizing the role of hands-on experience.

Conclusion: Nurse-reported UC duration varies, exceeding 20 min in 25% of difficult cases. Training confidence did not ensure protocol awareness, and experience improved speed but not first-pass success. Variability in protocol implementation highlights the need for standardization. Hidden UC challenges were identified through nurse surveys, offering insights for improving procedures.

AS-6.081

Establishing a national goal-directed nursing course on managing intravesical instillation

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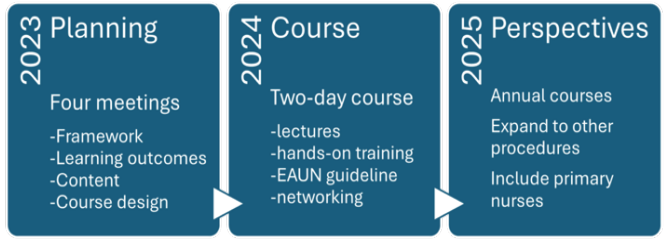
Introduction: Intravesical instillation therapy is a common urological procedure in Denmark used to treat non-muscle invasive bladder cancer and temporary replenishment of the glycosaminoglycan layer following bladder conditions. Performing intravesical instillation requires extensive nursing skills in disease management, safety, and handling adverse events. Currently, there is no standardized education or certification program. The purpose was to develop an evidence-based educational course to enhance the quality of care, increase adherence to guidelines, and improve nurses' confidence in performing intravesical instillations. Secondly, to increase the capacity of nurses performing intravesical procedures across the country.

Method: A national steering group was established across all regions in Denmark. In each region, the corresponding university hospital was represented by academic and clinical nurse competencies. The steering group used 2023 to define the framework, learning outcomes, content, and course design. The content followed the recommendations from the EAUN guidelines on intravesical instillations.

Results: The first course was held in 2024 with 20 participating nurses from Danish urological departments. Evaluations from the first edition were used to update the course, resulting in a 2.0 edition. The 2.0 edition, a two-day course, was held in February 2025 with 29 participants, including nurses from primary care. The program was constructed to reflect any step in performing intravesical therapy, including the patient perspective, by initiating the course with presentations from patients' representatives. Hereafter, lectures were held on bladder anatomy, bladder cancer, cystitis, pharmacology, and introduction to EAUN guidelines, leading to hands-on training in instillations with and patient communication during the nursing consultation. Finally, lectures on future perspectives within intravesical installation therapy were held, including perspectives on bringing the hospital to the patient

Conclusion: Participants' evaluation forms showed satisfaction with the theoretical content and the practice-sharing possibilities during the course. We expect the course to enhance the competence of urological nurses in intravesical instillation therapy.



AS-6.082

Nursing staffs' experiences with fluid balance charting: a Nordic focus group study

Lisbeth Roesen Leinum[1], Marianne Krogsgaard[2,3], Sören Nordh[4], Jakob Lundager Forberg[4,5], Anders Ohlhues Baandrup[6], Nessn Azawi[1]

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Introduction: Fluid balance charting is essential in assessing patients and planning care and treatment in surgical pathways. Further, fluid balance charting is crucial in urological patients with, for example, post-obstructive diuresis, urosepsis or acute kidney injury. However, the quality is known to be inaccurate and inadequate. This study aimed to explore nursing staff's experiences with fluid balance charting across clinical settings.

Method: In this descriptive, qualitative study, data were collected through semi-structured focus group interviews with nurses and healthcare assistants from various clinical departments in Denmark and Sweden. The focus group interviews were analysed using a phenomenological-hermeneutic approach inspired by Paul Ricoeur.

Results: We included 25 nurses and healthcare assistants in eight focus group interviews. We found a notable discrepancy between the perceived importance and accuracy of fluid balance charting. Nursing staff perceived fluid balance charting as a fundamental nursing task and recognised that the quality of charting could directly impact patient outcomes. However, the involvement of multiple persons and high patient-nurse ratios caused nursing staff to experience the charting procedures as beyond their control and consider the results inaccurate. Although they did their best to navigate the dilemma of prioritising patients and tasks, they could not always meet patients' needs. Quality may potentially be enhanced by following routines and responsibilities being clearly established. Digital technologies were suggested as a means of easing workflows.

Conclusion: Although fluid balance charting is considered an essential nursing task potentially reducing mortality and morbidity, nursing staff lacked control over charting, which was frequently inaccurate. Enhanced charting procedures may be achieved through consensus on responsibilities and well-established routines. Among nursing staff there is a growing receptiveness towards innovative, technological solutions and a recognition of the need for support of digital technologies.

AS-6.083

MidUrine Female, Precision Urine Sampling for Accurate Diagnosis and Reduced Antibiotic Overuse

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Introduction: Antibiotic resistance is an escalating global issue. Patients with an urinary tract infection (UTI) constitute a large group of patients receiving antibiotics, and diagnosing an UTI requires microbiological testing of midstream urine. The national guideline describe, that midstream urine, in citizens without a catheter, must be collected in a cup. For bedridden persons, midstream urine is collected after lower wash in a basin. However, collection of midstream urine is problematic especially in elderly women, for whom it is not possible due to incontinence or cooperation problems to collect midstream urine conventionally.The aim of this study deals with a comparative test of a new medical device, MidUrine, for non-invasive, automatic separation and hands-free collection of midstream urine. The MidUrine is designed to assist healthcare workers in collecting uncontaminated midstream urine samples, thereby facilitating accurate diagnoses and appropriate treatment for patients.

Method: This study compares microbiological results of urine samples collected with MidUrine and SIC, which secures sterile urine sampling. Participants are women referred to Dept. of Urology for any urological cause. The patient will receive oral and written information. Initially, urine will be collected using the MidUrine device. Following this first sample divided by min. 30 minutes, a second urine sample is collected via SIC. Both samples are sent to the Dept. of Clinical Microbiology for a blinded analysis.

Results: So far 22 out of 53 women are enrolled. Each participant has delivered two urine samples, which are analyzed. Results from the first 22 patients show similar urine culture results from the two urine samples collected by MidUrine or SIC respectively.

Conclusion: Preliminary results indicate agreement between the two urine samples collected. The results can indicate, that Midurine can be used to collect an uncontaminated midstream urine sample thereby securing the right diagnose and subsequently a reduction in the use of antibiotics.

AS-6.084

The patient in the right course – a reduction of referred patients with acute urinary retention and indwelling-catheter-related problems.

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Introduction: Department of Urology at Aarhus University Hospital gets patients referred with acute problems such as urinary retention and indwelling catheter problems. Sometimes the problems can be solved in the patients home in coorporation with a home care nurse, and thus admission to the department may be unnecessary. The aim is therefore to treat more patients "outside" the department expressed by a reduction in the number of emergency visits/admissions to the department due to urinary retention or indwelling catheter problems from January 2023 to October 2024.

Method: In 2022 data showed 5,086 emergency visits. Patients with urinary retention and/or indwelling catheter problems accounted for 17% corresponding to 16 patients/week. During 2023, several different initiatives have been launched. Meetings have been held with the municipality's emergency team, and a working on a cooperation agreement with the team is startet. Visitation manuals and flowcharts have been prepared for use internally in the department. Flowcharts have been tested and evaluated by nurses and doctors, and are now an integral part of the daily work. Manuals and flowcharts support the decision whether the patient must be seen urgently in the ward or whether the problem can be solved by the patient's general practioner or in the patient's own home.

Results: Number of contacts are expressed by the median. In marts 2024 there is a significant decrease from 14 patients/week to 9 patients/week. At this time the visitation manuals and flowcharts was introduced, furthermore the work on the cooperation agreement began.

Conclusion: Drawing up visitation manuals and flowcharts as well as collaboration agreements with relevant partners can reduce the number of patients referred with acute urinary retention and indwelling catheter problems. This reduces unnecessary admissions, time savings for patients and staff, but not least it ensures that the patient receives the right help at the right time and place.