NUF 2022 | June 8-11, 2022 Helsinki, Finland

NUF2022 Posters

Poster session 1
Thursday, June 9 at 15:15 – 17:00

1. **Regional Population-Based Organized Prostate Cancer Testing (OPT) Projects: A Structured Preparation for a National Screening Programme**

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Background: National authorities worldwide recommend against prostate cancer screening because the population benefits do not clearly outweigh harms. Nonetheless, unorganized PSA testing is very common in the Nordic countries. As unorganized testing is ineffective and unequal, the Swedish health-care authorities support regional population-based projects with “organized prostate cancer testing” (OPT) to standardize prostate cancer diagnostics, make it more cost-effective and equal, and fill knowledge gaps.

Methods: A national OPT working group with representatives from all 6 regional cancer centres and relevant experts was formed in 2019. An administrative system has been developed, which automatically sends invitation letters, test results, referrals, and follow-up invitations. All results are registered for quality control and research. A nationally agreed brief description of pros and cons of OPT is included in all invitation letters. The standard diagnostic algorithm includes a pre-biopsy MRI, PSA density based biopsy indications, and risk-stratified test intervals. Regional projects may choose an alternative algorithm, for example with an additional biomarker. The results can be compared with the the standard algorithm.

Results: The two first regional OPT projects were launched in 2020. In these regions all 21,000 men turning 50 years are actively invited to participate, in one region also those turning 56 years. Three PhD students do research based on the projects. In 2023, 13 of the remaining 19 Swedish regions are expected to have started OPT projects.

Conclusions: These regional OPT projects will create the infrastructure and gain essential knowledge needed for a future screening programme.

2. Withdrawn

3. Time without PSA recurrence after radical prostatectomy as a predictor of future biochemical recurrence, metastatic disease and prostate cancer death: a prospective Scandinavian cohort study

Mats Ahlberg[1], PhD Hans Garmo[1,5,6], PhD Hans-Olov Adami[7,2], PhD Ove Andrén[8,10], PhD Jan-Erik Johansson[3,8], PhD Gunnar Steineck[9,4], PhD Lars Holmberg[1,6], PhD Anna Bill-Axelson[1]
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Background
Surveillance after radical prostatectomy routinely includes repeated PSA-testing for many years. Biochemical recurrence often occurs without further clinical progression. We hypothesised that follow-up can be shortened for many patients without increasing the risk for prostate cancer death. We investigated the long-term probabilities of PSA recurrence, metastases and prostate cancer death in patients without biochemical recurrence five and ten years after radical prostatectomy.
Methods
Between 1989 and 1998, 14 urological centers in Scandinavia randomised patients to the SPCG-4 trial. All patients who underwent radical prostatectomy within one year from inclusion were eligible. Data was collected prospectively and was stratified by Gleason score (≤3+4=7 or ≥4+3=7), pathological tumour stage (pT2 or ≥pT3) and negative or positive surgical margins. We analysed the cumulative incidences and absolute differences in metastatic disease and prostate cancer death.
Results
We analysed 302 patients with complete follow-up during a median of 24 years. Median preoperative PSA was 9.8 ng/ml and median age was 65 years. For patients without biochemical recurrence 5 years after radical prostatectomy the 20-year probability of biochemical recurrence was 25% among men with Gleason score ≤3+4=7 and 57% among men with Gleason score ≥4+3=7; the probabilities for metastases were 0.8% and 17%; and for prostate cancer death 0.8% and 12% respectively. The long-term probabilities were higher for pT≥3 vs. pT2 and for positive vs. negative surgical margins.
Conclusions
Our study indicates that men with favourable histopathology without biochemical recurrence 5 years after radical prostatectomy can stop follow-up earlier than 10 years after radical prostatectomy.

4. Risk of early upgrading for low volume, ≤2 cores, GS 3+4 prostate cancer: A single center retrospective follow-up.

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Background

Guidelines support considering selected men with ISUP grade group 2 prostate cancer (PCa) for active surveillance (AS). However, which patients among these can be safely managed by AS remains uncertain. We assessed the association of clinical variables with unfavourable pathology (pT-stage ≥3, ISUP ≥3, and/or N1) at radical prostatectomy (RP) in low volume Gleason 3+4 prostate cancer on biopsy.

Methods
We performed a retrospective analysis of 378 men with low volume (≤2 cores) Gleason 3+4 localised PCa who underwent prostatectomy at a single tertiary cancer care center. We analysed rates of unfavourable pathology at RP in relation to clinical factors and compared the strongest predictors with commonly used AS restrictions in Gleason 3+3.

Results
128/378 (34%) men had unfavourable pathology at RP. On multivariable analysis, >5% Gleason pattern 4 was independently associated with an increased risk of ISUP ≥3. A maximum percentage core involvement >50% was independently associated with an increased risk of pT-stage ≥3 and unfavourable pathology. Restriction to patients with ≤5% Gleason 4 decreased the upgrading of both unfavourable pathology (OR 0.62, p=0.041) and ≥ISUP 3 (OR 0.17, p=0.0007) compared to the full cohort, while restriction with ≤50% of max core involvement nor the compared Gleason 3+3 restrictions did not.

Conclusions
In low volume Gleason 3+4 percentage of Gleason 4 of ≤5% was the strongest predictor in reducing upgrading at final pathology. This easily available pathological description could be used to guide urologists and patients when considering active surveillance in this setting.

5. High Intensity Focused Ultrasound (HIFU) for prostate cancer (PCa) – Early functional and oncological results in 101 cases

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Background: Treatments for localized PCa are radical prostatectomy, mostly robot-assisted (RALP) or irradiation. Both modalities cure most cases, but are hampered by significant genitourinary side effects. Recent progress in MRI and TRUS-fusion has changed the diagnostic algoritms and now also the therapeutic options, enabling focal treatment to be delivered with great precision. Several such modalities, among them HIFU, have been developed.
Methods: Commencing February 2020, 101 men (mean age 64) with intermediate risk PCa, fulfilling the inclusion criteria (T1c-T2, unilateral, dorsal lesion, > 6mm from the urethral sphincter, PSA <20) were treated with Sonablate HIFU, as outpatient procedure in general anaesthesia. Followup with PSA at 3,6,12,18 months, MRI at 2 weeks, and one year, with fusion-guided rebiopsy from the treated area and any other identified lesion.
Results: For 60 cases 6 month followup is available.
Immediate complications: 2 urinary retention, 3 urosepsis, 1 heart failure, one prostatorectal fistula, which healed spontaneously on suprapubic catheter drainage.
Functional results: 3/60 (5%) patient had significant urinary incontinence (1 pad or more/day) 20/60 (34%) suffered from significant ED.
Oncological results: One patient insufficiently treated at 2 week MRI, was rebx:ed early and had RALP. 13/40 (32%) patients had positive bx at 12 months, whereof 5 out of field residual tumor. 9 had minimal residual (ISUP 1-2) tumor and are currently on continued active monitoring, 4 underwent RALP.
Conclusion: HIFU has been successfully introduced with very good functional outcome. The oncological follow-up is short, but results are comparable to contemporary RALP series.

6. **Provider Variation in Patient-Reported Pain Scores During In-Office Transperineal Prostate Biopsy Under Local Anesthesia**

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Background: Transperineal prostate (TP) biopsy minimizes the risk of post-biopsy infectious complications. We examined provider level variation and factors associated with pain and discomfort during in-office TP biopsy.

Methods: A standardized, immediate, post-procedure patient-reported survey was administered to men undergoing TP biopsy. Patient-reported overall pain and pain for each subdomain including positioning, probe insertion, anesthetic administration, and prostate sampling were evaluated using the validated Wong-Baker FACES pain scale. Bivariate analyses were performed to determine association of age, race, Body Mass Index (BMI), and Charlson Comorbidity Index (CCI) with pain during biopsy. Provider-level variation was assessed for overall pain, and at each portion of the procedure, among urologists who had performed > 10 TP biopsies.

Results: A total of 309 patients undergoing TP biopsy with 12 urologists completed the survey. The median score for overall pain during the procedure was 4 (IQR 2-5). Across all subdomains, anesthetic administration demonstrated the highest pain scores (Median=4 [IQR 2-6]). Across providers, significant variation was observed on pain scores related to local anesthetic administration and prostate sampling (p=0.024 and p=0.041, respectively). Age, race, and BMI were not significantly associated with overall pain scores. Patients with more comorbidities were more likely to report lower pain scores (p=0.031).

Conclusions: In-office, TP biopsy under local anesthesia is well tolerated with only mild to moderate discomfort. Significant variation exists between providers in patient-reported pain scores during administration of local anesthesia and prostate sampling. Standardization of technique may offer an opportunity to reduce patient reported pain scores during TP biopsy.

7. **Results from salvage robotassisted laparoscopic prostatectomy (sRALP) after definitive radiotherapy at Oslo University Hospital (OUH) (2013-2021)**

Andreas Habberstad[1], Siril Stokke[1], Bjørn Brennhovd[1], Viktor Berge[1,2]
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Background:
There are still controversies in the management of radiorecurrent prostate cancer. In this study, we provide further information of complications and oncological outcomes from patients operated with sRALP.

Methods:
We retrospectively included 45 patients, consecutively treated with sRALP for radiorecurrent prostate cancer at OUH. Data was retrieved from the electronic patient journals. Local recurrence was confirmed by MRI and prostate biopsy. Complications to surgery were classified in accordance to the Clavien-Dindo classification. Biochemical relapse (BCR) post-sRALP was defined as PSA levels > 0,2ng/ml.

Results:
All patients had received external beam radiation, three of the patients in combination with high dose-rate brachytherapy. Median time interval from radiation to operation was 87 months. 21 patients (47%) were operated with pelvic lymph node dissection (PLND) of which lymph node metastases were found in nine

patients (20%). Positive surgical margins were present in 23 patients (51%). At follow up (median 37 months), four patients were deceased, of which two due to prostate cancer (4%). Twenty patients (44%) had received ADT treatment, while twenty patients (44%) did not have biochemical recurrence. There were 3 (7%) and 14 patients (31%) with Clavien Dindo score 4 and 3, respectively. Seventeen patients experienced anastomosis leak (38%). 10 patients (22%) had surgery for incontinence, including AMS 800 sphincterprosthesis (6 patients) and ileal conduit (5 patients, one had both).

Conclusions:
Salvage RALP remains a treatment option for patients with recurrence of prostate cancer after definitive radiotherapy. However, this option must be balanced against the substantial risk for major complications.

8. Implementation of organized prostate cancer testing in Region Västra Götaland, Sweden

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Background: In 2018, the Swedish Ministry of Health and Social Affairs asked the confederation of Regional Cancer Centres to outline regional projects with "organized prostate cancer testing" (OPT) in order to standardize and rationalize PSA-testing in Sweden. We present the implementation of OPT in Region Västra Götaland, one of the two first Swedish OPT projects.
Methods: A risk-stratified algorithm based on PSA, PSA-density, MRI and age was developed. An administrative system identifies eligible men in the Population Register and automatically sends out invitation letters with information about advantages and disadvantages of PSA testing and about the OPT pathway. Men with a PSA ≥3 ng/ml are offered MRI. Those with PSA-density ≥ 0.15 ng/mL2 and/or a positive MRI (PIRADS 4-5) are referred for prostate biopsy. Men with a PSA ≤3 ng/ml and those with a benign biopsy are re-invited after 2 or 6 years. All data are registered for OPT evaluation and research.
Results: Between September 2020 and Dec 2021, 21,254 50-year-old men were invited. Participation rate was 38%; 2,2% had PSA ≥3 ng/ml and underwent MRI. Most (68%) had a negative MRI. Of 58 men with indication for biopsy, 35 were diagnosed with prostate cancer. Twenty-four men received treatment and 11 started active surveillance. Research about diagnostic, psychosocial and socioeconomic aspects is ongoing.
Conclusions: We have designed and implemented an OPT programme that has proven to be well-functioning. The experience and knowledge gathered will be of value for other regions and countries starting OPT or screening programmes for prostate cancer.

9. Transurethral Vapor Ablation of Intermediate Risk Localized Prostate Cancer (PCa)

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Background

We report results of a prospective, multicenter, single-arm study of transurethral vapor ablation (TUVA) of prostate tissue in patients with unilateral, intermediate risk localized prostate cancer.

Methods

Men aged ≥45 years with biopsy confirmed unilateral Gleason Grade Group 2 (GG2) adenocarcinoma of the prostate, prostate volume 20-80 cc, and PSA ≤15 ng/mL were enrolled. Cystoscopy and TRUS were used to deliver water vapor for hemi-gland ablation including destruction of cancers identified by mpMRI and biopsy. Primary outcome was device related serious adverse events (SAEs). At 7 days, and 6 and 12 months post-procedure mpMRI assessed ablation extent; MRI/TRUS fusion biopsies were completed at 6 months. Quality of Life (QOL) was assessed with validated questionnaires.

Results

Fifteen subjects successfully underwent a single hemi-gland TUVA procedure. No device or procedure related SAEs occurred. Grade 2 procedure-related AEs included transient urinary retention (n=4) and erectile (n=1) or ejaculatory dysfunction (n=1). At 7 days, mpMRI revealed complete ablation of 14/17 (82‰) lesions visible on MRI. At 6 months, biopsies showed no ≥GG2 cancer on the treated side of the prostates in 13/15 (87‰) subjects; median prostate size was reduced 52‰ and PSA by 59‰ at 12 months. QOL assessments showed no appreciable deleterious effect of treatment in the majority of subjects.

Conclusions

Initial evidence suggests TUVA is safe in men with intermediate-risk prostate cancer. Preliminary results demonstrate the absence of ≥GG2 disease on the treated side in 87‰ of men and a favorable QOL profile.

10. Duration of androgen deprivation therapy in men with progression after radical therapy for prostate cancer

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Background
Androgen deprivation therapy (ADT) is common treatment in men with progression of prostate cancer (PCa) after radical therapy (radical prostatectomy; RP or radical radiotherapy; RRT). The aim of this study was to investigate the proportion of men after radical therapy subsequently received ADT (bicalutamide or GnRH-agonists) as well as duration of ADT.

Methods
Data from Prostate Cancer data Base Sweden (PCBaSe) RAPID 2019 were used in this longitudinal cohort study. PCBaSe was created by linkages between National Prostate Cancer Register (NPCR) and other Swedish healthcare registers. In total 56 989 men in PCBaSe had been treated with radical therapy between 1 January 2006 until 31 December 2019 and were included in this study.

Results
35 959 men underwent primary RP and 21 039 men underwent primary RRT. Ten years after diagnosis 7% of men who had undergone RP had received ADT. Out of men who received primary RRT, 27% had received subsequent ADT after ten years. Specifically, ten years after RRT, 8%, of men with low-risk Pca had received ADT, 22% of intermediate-risk, 36% of localised high-risk, and 43% of men with locally advanced PCa. Median treatment duration after RRT with all ADT's combined was 10 years (Q1-Q3: 9-11), for bicalutamide 7 years (Q1-Q3: 7-8), and for GnRH 6 years (Q1-Q3: 5-7) as first ADT and 4 years (Q1-Q3: 3-4) for GnRH after bicalutamide.

Conclusions
In Sweden, ADT is commonly used after failure of radical treatment, especially after failure of RRT. Time on treatment with ADT is long.

11. Frequent, significant responses are observed with 177Lu-PSMA treatment in metastatic castration resistant prostate cancer, which associate to improved survival

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Background:
^{177}Lu-PSMA-617 is a novel, promising theragnostic treatment for metastatic castration resistant prostate cancer(mCRPC). However, it is not known how to identify responders from non-responders among possible treatment candidates.

Material and methods:
62 docetaxel resistant men with pathologically confirmed mCRPC who were treated with ^{177}Lu-PSMA-617 during 1/2017– 2/2019. Treatment responses were classified into four categories based on PSA response: progression, PSA decrease<25%,<50% and >50%. Overall survival (OS) and progression free survival (PFS) were determined. Metabolic tumor volume of metastases (MTV), SUVmax and tumor lesion activity(TLA) were quantitated from pretreatment PSMA PET/CT images together with pre-treatment PSA and PSA-velocity. Median follow-up time was 1.4 years(IQRT 0.5-2.2).

Results:
Median age was 71.3(IQRT 66.6-75.6). Years from diagnosis was 8.6(4.1-12.7).S-PSA level before treatment was 83.6(12.0-310.4). An average 3 treatment cycles(2-5) were given within 4–5-week intervals. PFS was 4.9 months(2.4-9.6) and OS was 17.2 months(6-26.4).
Excellent>50% PSA decrease was noted in 58.7%, good response(<50%) in 12.7%, minor response in 12.7% and non-responders accounted for 15.8%. Excellent PSA response was significantly associated to longer OS,p<0.004. MTV, TLA, lesion SUVmax, pretreatment PSA or its velocity did not associate to OS or PFS. There were no major adverse events reported.

Conclusions:
^{177}Lu-PSMA treatment was safe and effective in terms of PSA decrease in substantial number of patients. Almost 60% of patient had excellent PSA response, which associated also to better OS. Pretreatment PSA kinetics or staging PSMA PET/CT derived parameters were not helpful in identifying treatment responders from non-responders; better biomarkers are needed to aid in patient selection.

12. Infectious complications after transrectal MRI-targeted and systematic prostate biopsy

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Background: The MRI-targeted biopsy (TB)-based diagnostic approach has been shown to improve the detection rate of clinically significant prostate cancer (PC) by 12% and to decrease the detection rate of clinically insignificant PC by 40% compared to systematic biopsies (SB). Little is known on the risk of post-biopsy infectious complications after MRI-TB compared to SB. We compared the frequency of infectious complications within 30 days after SB and MRI-TB in a large retrospective cohort.
Methods: 4497 patients underwent 5288 biopsies; 2875 (54%) SB and 2413 (46%) TB. The primary endpoint was a positive urine culture. Secondary endpoints were positive blood cultures, urine tests with elevated

leukocytes ≥100 E6/L, elevated C-reactive protein (CRP) ≥100 mg/L, blood cultures drawn, urine cultures taken and CRP tests taken.
Results: Positive urine cultures were found in 77 (2.7%) after SB and in 42 (1.7%) after MRI-TB (p=0.022). 46 (0.9%) blood culture positive infections were found, 23 (0.9%) after SB and 23 (1.0%) after MRI-TB, (p=0.848). Urine tests with elevated leukocytes were found in 111 (3.9%) after SB and 61 (2.5%) after MRI-TB (p=0.006). Elevated CRP was found in 122 (4.2%) after SB and 72 (3.0%) after MRI-TB (p=0.015). Blood cultures were drawn more often after SB than after MRI-TB but the difference was not statistically significant. However, urine cultures and CRP were taken more often after SB than MRI-TB.
Conclusions: Blood culture positive infections were equally rare after SB and MRI-TB. However, all other infectious complications were more common after SB than MRI-TB.

13. Risk of clinically significant prostate cancer after negative prostate MRI – a comparison to general population

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Background

How to proceed after a nonsuspicious prostate MRI (nMRI) is controversial. Such decision would benefit from comparing the risk of clinically significant (csPCa) and insignificant prostate cancer (isPCa) to outcomes in general population, which were the primary aims of this study. Our secondary aim was to assess the value of PSA density (PSAD) in risk stratification.

Methods

We utilized institutional and national registries to retrospectively identify 1685 consecutive 50-79-year-old men without a previous PCa diagnosis, who underwent a primary prostate MRI with a nonsuspicious finding between December 2015 and May 2019. We compared incidence rates (IR) of csPCa and odds of isPCa (versus csPCa) in men with nMRI and the 50-79-year-old male population in the area (n=230 246) during up to four years of follow-up. We performed similar comparison for the 906 men with nMRI and PSAD < 0.15 ng/ml/cm³.

Results

Age-standardized IRs of csPCa per 100 000 person-years were 519 in general population, 2201 in men with nMRI, and 948 in men with nMRI and low PSAD. IR ratio of csPCa after nMRI was 4.2 (95% confidence interval [95% CI] 3.3-5.4) and it was reduced to 1.8 (95% CI 1.1-2.9) for men with low PSAD. Odds ratios of isPCa were 3.0 (95% CI 2.0-4.6) and 4.7 (95% CI 2.3-9.6), accordingly.

Conclusions

For men with nMRI and PSAD < 0.15 ng/ml/cm³, IR of csPCa approaches that of general population, while risk of isPCa is substantially increased. Hence, our findings do not support routine systematic biopsy of such men.

14. Cognitive-fusion transperineal prostate biopsy: Safety and efficacy

Alfred Honoré[1], MD Adeel Asghar Chaudhry[1], MD, PhD Christian Arvei Moen[1], MD Ravi Rawal[1], Andrine Sandøy[1], MD, PhD Lars Anders Rokne Reisæter[2], MD, PhD Karsten Gravdal[3], Professor, PhD Christian Beisland[1,4]

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Background:
Increasing rates of urosepsis following transrectal prostate biopsy (TRBx) has forced changes in biopsy technique. Transperineal prostate biopsy (TPBx) is associated with less urosepsis cases, but has logistical challenges. We devised a fast, semi-sterile TPBx procedure under local anaesthesia without the use of bespoke equipment, sterile draping or advanced fusion systems.
Method:
Starting in 2020 patients with visible lesions on multiparametric magnetic resonance imaging (mpMRI) underwent TPBx. The perineum was cleaned with 5% Chlorhexidine, but sterile gloves and drapes were not used. A total of 20mL Xylocain was administered, 5mL to the skin and 15mL via a Braun 14G 80mm needle to the prostatic apex. This needle also acted as the coaxial access for the biopsy needle, visualised via a linear biplane ultrasound probe. Bilateral procedure was performed if needed. Three biopsies were planned per visible lesion.
Results:
In total, 921 patients underwent TPBx. Average (IQR) age, PI-RADS score, number of biopsies per patient and grade group were 68 (62-73), 4(4-5) and 3(3-4), respectively. Overall cancer detection rate was 70.4%, with average (IQR) grade group 2(2-3). Thirty patients received antibiotic prophylaxis. Duration per consultation was 30 minutes. Eight patients received antibiotics due to postprocedural urinary tract infection symptoms. One patient was admitted with gross hematuria and urinary retention, but no patient was admitted with urosepsis. Only one procedure was done under general anaesthesia, due to anal stricture.
Conclusions:
Coaxial cognitive-fusion TPBx without antibiotic prophylaxis is safe, cheap and effective with good cancer detection rates.

15. P-score in preoperative biopsies predicts P-score and final pathology in radical prostatectomy specimens in patients with localized prostate cancer

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Background
This study assessed the value of a previously validated score system for preoperative core needle biopsies (P-score) in predicting the pathology of prostate cancer in the following radical prostatectomy specimen. The score is based on expression of patient-specific gene signature (IGFBP3, F3, and VGLL3). The study also aimed to evaluate the concordance of P-score between different tumor foci from the same prostatectomy specimen.
Methods
100 PCa patients, all diagnosed by MRI/TRUS fusion-guided core needle biopsies (CNB) followed by robot-assisted radical prostatectomy (RP) were included. Gene expression was assessed with Prostatype® RT-qPCR kit and P-score was determined. P-score ranges from the integers 0 to 15 and is categorized into three risk groups by using previously defined cut-offs.
Results

CNB yielded sufficient materials in 71 men for comparison with the RP specimens. CNB-based P-score, but not PIRAD score was found to predict final pathological T-stage in specimens (Kruskal- Wallis H value: 4.64, P=0.03). CNB-based P-score was in substantial agreement with RP-based P-score with a kappa score of 0.83 and a Spearman's rank correlation of 0.84 (95% CI: 0.74-0.91, p<0.0001). P-score in the index-tumor and concomitant foci were also in great agreement (kappa score: 0.81) as well as significantly correlated with a Spearman's rank score of 0.85 (95% CI: 0.75-0.91, p<0.0001).
Conclusions
CNB-based P-score accurately predicts the final pathology as well as P-score in the RP specimens. P-score in index tumor and concomitant foci also show substantial concordance. Thus, CNB-based P-score is adequate for assisting with predicting prostate cancer progression.

16. Gene expression in multi-parametric MRI visible and invisible prostate cancers predicts progression

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Background: Some 10-20% of clinically significant prostate cancer (csPCa) is missed with magnetic resonance imaging (MRI). Evidence on biological differences between MRI visible and invisible csPCa is scarce. Our aim was to identify a signature of MRI visibility and to correlate the signature with PCa outcome.
Methods: A retrospective cohort of 45 radical prostatectomy-treated men with csPCa, including 30 with MRI visible and 15 invisible lesions, and additional 19 benign controls. RNA was analyzed for differentially expressed genes (DEGs) and Reactome pathway analysis was performed to identify genes and pathways associated with MRI visibility. Random forest models (RFMs) were trained to predict MRI visibility using DEGs and compared to genes in MSK-IMPACT, Decipher, Oncotype DX and Prolaris. RFMs were also trained to predict metastatic and lethal PCa using DEGs in a separate cohort.
Results: We identified signatures of 10 and 52 DEGs and 65 subpathways associating with lesion visibility. RFMs based on genes in MSK-IMPACT (AUC = 0.93) showed stronger prediction performance compared to Decipher, Oncotype DX and Prolaris (AUC = 0.69-0.86). Our 52- and 10- DEG signatures predicted metastasis (AUC = 0.67 and 0.65) and lethal disease (AUC = 0.70 and 0.72) in an independent cohort and the samples with predicted poor outcomes had worse survival ($p < 0.0001$).
Conclusions: MRI visibility is a net result of many genes. Invisible lesions seem to harbor a less aggressive transcript signature than visible lesions. Further research is required to validate these findings on a protein level and to find histological correlates.

17. Surgery for Postprostatectomy incontinence (PPI) after robot-assisted laparoscopic prostatectomy (RALP) at Haukeland University Hospital (HUS) 2012-2019

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Background: PPI is a well-known complication to RALP and surgical repair is one treatment option. We aimed to analyze patients who underwent RALP at HUS and later had incontinence surgery.

Methods: Men who underwent RALP at HUS in the period 2012-2019 and later had surgical interventions for PPI with either artificial urinary sphincter (AMS800) or Adjustable transobturator male sling system

(ATOMS) were included. Data was retrieved from the medical records and presented as median (IQR) or n (%).

Results: RALP was performed on 1314 patients 2012-2019; 610 between 2012-2015 and 704 between 2016-2019. Of these, 86 (6.5%) had PPI surgery at HUS; 43 AMS800 and 43 ATOMS. In the first period 48 patients had PPI surgery, compared to 38 patients in latter, yielding a trend towards reduction in incontinence-rate from 7.9% to 5.4%, respectively (p=0.07). Mean time from RALP to PPI surgery was 2.4 years (2.1, 1.8-2.8). In both periods ten men have had prior radiation. Patients treated with AMS800 in the second period had a larger median (IQR) leakage than those in the first period patients; 817 g/d (487-1031) compared to 548 g/d (246-935) (p=0.16) Among ATOMS patients median (IQR) padweight test was 210g/d (139-349) in the second period compared to 160g/d (53-239) in the first period (p=0.09).
Conclusions: When comparing RALP complicated with PPI in 2016-2019 with 2012-2015 there is a trend towards a lower number of patients with the need of PPI surgery. This may reflect variation in both patient selection, referrals and factors related to surgery.

18. Adjuvant radiotherapy is associated with improved progression free survival for men with measurable PSA at first follow up after prostatectomy – preliminary results

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Background
Some patients still have a measurable PSA above 0.1 ng/mL at first follow up after radical prostatectomy (PSA persistence). Little is known about this patient population, especially with regards to long-time survival and the effect of adjuvant radiotherapy (aRT). Our aim was to study outcomes in a population-based setting.
Methods
All men in Stockholm, Sweden who underwent a prostatectomy between the year 2004-2018 were included. Patients were identified from the Stockholm PSA and Biopsy register which includes social data, detailed cancer data, comorbidities, and follow-up. PSA persistence was defined as a PSA of >0.1 ng/mL 4 weeks or more postoperatively. aRT was defined as radiotherapy within the first year after prostatectomy. Endpoints were all cause mortality, cancer specific mortality and progression free survival (progression was defined as hormone treatment). Statistics used were chi-square test, Mann-Whitney U test and multivariate Cox regression.
Results
Of 8905 men who underwent prostatectomy, 496 (6%) experienced PSA persistence. Median follow-up time was 8 years. These men had worse diagnostic tumor pathology and higher preoperative PSA. Gleason score, clinical T-status and preoperative PSA were significant predictors for PSA persistence. Men with PSA persistence had higher all-cause mortality (HR 2.23 95%-CI 1.60-3.12), cancer specific mortality (HR 5.32 95%-CI 2.73-10.37) and risk of cancer progression or all-cause mortality (HR 6.44 95%-CI 5.40-7.68). 95 men with PSA persistence received aRT. aRT was associated with a lower risk of progression and all-cause mortality (HR 0.73, 0.54-0.98).
Conclusions
Men with PSA persistence had worse prognosis. Adjuvant radiotherapy improved progression-free survival.

46. FUNCTIONAL OUTCOMES AT 12 MONTHS AFTER FOCAL ABLATION VERSUS RADICAL PROSTATECTOMY FOR INTERMEDIATE-RISK PROSTATE CANCER. INTERIM ANALYSIS OF RANDOMIZED CONTROL TRIAL.

MD,PhD Eduard Baco, Tigist Alemu Berhanemeskel, MD, PhD Erik Rud, Professor Heidi Beate Eggesbø

[1]*Oslo University Hospital*

Introduction

To compare functional outcomes between focal prostate ablation (FA) using High intensity focused ultrasound (HIFU) and Robotic Radical prostatectomy (RP) after one year in patients included in randomized control trial FARP. (ClinicalTrials.gov Identifier: NCT03668652).

Methods

A total of 148 patients with unilateral intermediate-risk PCa were randomized 1:1 to treatment with FA (64%) or RP (36%) with a cross over rate of 28% from RP to FA between the period of 2017- 2020.

Mean age, PSA and tumor diameter for FA vs. RP was 63 vs. 65 yrs, 8 vs. 8.7 ng/ml and 13.4 vs.14.5 mm.

FA was performed using a FocalOne® HIFU device. Robotic RP was performed using unilateral nerve-sparing surgery.

Voiding and erectile function was assessed using patient reported IPSS and IIEF-5 questionnaires. De-novo urinary incontinence (UI) was defined as the patient reported need for 1 or more pads per day.

Results

Mean baseline IPSS for HIFU and RP was 9.4 (SD 7.1) and 10.8 (SD 8.6), p=0.27. After one year it was 7.25 (SD 5.9) and 8.5 (SD 6.4), p=0.23

Mean baseline IIEF-5 for HIFU and RP was 18.6 (SD 7) and 18.6 (SD 7.1), p=0.97. After one year it was 16.2 (SD 7.4) and 7.3 (SD 4.8), p<0.001.

De-novo UI occurred in 6% following HIFU and 42% following RP.

Conclusion

One year post treatment, FA preserved erectile function and continence better than RP. The incidence of crossover in the RP group was high, demonstrating dimension of the patient's choice in the care of their PCa.

Poster session 2
Thursday, June 9 at 15:15 – 17:00

19. Use of Photodynamic diagnosis (PDD) at primary TURB: Potential influence on recurrence and progression rates in NMIBC in a registry-based study using a country cohort

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Background
Treatment effect and long-term outcome of non-muscle invasive bladder cancer (NMIBC) rely largely on diagnostic accuracy, which may be enhanced using photodynamic diagnosis (PDD) for transurethral bladder resection (TURB). We aimed to describe recurrence and progression rates according to PDD-use at department-level in an unselected national cohort of NMIBC patients.
Methods

Through the Danish National Patient Registry, we identified 9,939 patients with first-time NMIBC in 2011-2017. We divided them into four exposure groups according to the treating department's use of PDD in primary TURBs. Group 1 used PDD in less than 40% of primary TURBs, group 2 in 40-58%, group 3 in 59-73%, and group 4 in more than 74%. The outcome was 5-year recurrence and progression risks (cumulative incidence, death as competing risk). Group 1 was reference group; results were reported as risk differences (RD) compared to group 1. Use of instillation therapy was considered in the analysis.

Results

Overall 5-year recurrence and progression risks across PDD exposure groups were 47.6% [95%CI: 46.4; 48.7] and 16.6% [95%CI: 15.7; 17.5], respectively. 5-year recurrence risk in group 1 was 52.6% [95%CI: 49.3; 55.8], the 5-year RDs were 4.0%, 9.1% and 4.4% in groups 2, 3 and 4, respectively. The 5-year risks of progression was 21.5% [95%CI: 18.6; 24.1] in group 1, this was also substantially lower in groups 2, 3 and 4: RD 4.9%, 7.5% and 5.7%.

Conclusions

Common use of PDD in the primary TURB at department level seems to be associated with lower 5-year recurrence and progression risks.

20. Surveillance of high-grade non-muscle invasive bladder tumours using the Xpert® Bladder Cancer Monitor: the DaBlaCa-15 randomised trial

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Background

Non-muscle invasive bladder cancer constitutes the majority of newly diagnosed bladder tumours (NMIBC). Scheduled frequent surveillance is indicated for NMIBC patients because of high recurrence rate and to avoid progression. The gold standard for surveillance is flexible cystoscopy (FC). However, FC is invasive, expensive and not always sensitive enough. Xpert® Bladder Cancer Monitor (XBLCM) is a urinary biomarker test that has shown promising results as a safe replacement for FC. However, high-level evidence from randomised clinical trials is lacking.

Methods

A randomised clinical trial is currently being conducted at four Danish urological departments. Patients with high-grade (HG) NMIBC (Ta, T1 and CIS) are randomised 1:1 between standard follow-up surveillance with FC versus an intervention arm with follow-up surveillance consisting of XBLCM test, where FC is conducted only in case of positive test and for safety reasons every 12 months. Patients in both arms are examined every three-four months for two years.

Results

All 392 projected patients have been included. Eighteen recurrences have been detected in the standard arm, and 19 in the intervention arm. For patients with at least one year of follow-up (n=231) the risk difference at 12 months is -0.01 (95% CI, -0.07–0.09). Thus, no difference in detection is found between the two arms.

Conclusions

Preliminary results indicate that XBLCM is a safe alternative to cystoscopy for surveillance of NMIBC. If this is confirmed in the remaining participants, the XBLCM could replace cystoscopy in most of future follow-up visits in patients with previous HG NMIBC.

21. To be navigator in own course when having ostomy after surgery for bladder cancer

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Background
The patient trajectory in relation to cystectomy after bladder cancer has been accelerated during the last years concurrently with a heavy workload for healthcare professionals. These conditions may impact on patients' experiences of their trajectory. It is evident that being treated for bladder cancer may impact on patients' health related quality of life. Knowledge about patients' experience is essential to meet their needs and improve or retain their quality of life.
Aim
To explore patients' experience of their trajectory with bladder cancer and ostomy – from the diagnosis to two months after being discharged.
Design and methods
The study has a phenomenological-hermeneutic design. Fourteen semi-structured with patients were performed using content analysis inspired by the approach by Graneheim and Lundman.
Results
The analysis demonstrated that patients experience to a navigator in their own course contemporary with being in a condition of concern and being physically and socially challenged. In addition, the findings illustrated that professionalism, continuity in care and person-centered communication are essential for navigating in the course.
Conclusions
This study contributes with knowledge that supports and develops nursing care to patients having an ostomy after bladder cancer. It also points to the importance of the delivery of person-centered and situation-oriented fundamental nursing care.

22. Self-reported questionnaires on BCG side effects send on text message and returned directly into a research database – new and easier way of data collection?

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Introduction and objectives: In the North-Reg Dwell Time study, we will include 314 bladder cancer patients treated with Bacillus Calmette Guérin vaccine (BCG) randomized into an intervention and a control group. We monitor side effects by daily questionnaires sent out on a text message (SMS) during BCG instillation period. Furthermore, we follow patients with Quality of Life (QoL) questionnaires - also by SMS.
Previous studies have showed response rates in electronic questionnaires vary from 3% to 77% with a median of 16% in meta-analyses.
In an initial patient series from the study, we aimed to investigate the response rate when collecting study related healthcare data on a SMS.

Materials and methods:
In total, each patient will receive up to 94 SMSs with predefined questionnaires sent out from a GDPR approved database. The questionnaires are converted into a SMS with a link opening a web browser on the patient's smartphone. The patients response is transmitted directly back into the database.
Results: In total, we have sent out 3004 text messages to 45 different participants on 1831 questionnaires, both daily questionnaires and QoL. The overall response rate was 96%. In side effect questionnaires, which accounted for 92% of all questionnaires, the response rate was 97%. In QoL questionnaires, the response rate was 91%.
Conclusion:
This feasibility study indicates that sending out questionnaire by SMS we obtain an impressively high response rate and thereby increase the overall data collection. It is a safe and easy way of collecting healthcare data for clinical studies.

23. Hexaminolevulinate (HAL) in fluorescence-guided transurethral resection of bladder tumor (TURB) - a retrospective study of a 2-year cohort

Rachel Ahila Maheswaran[1], Emanuel Bjurulf[1], Ingunn Roth[1], Anne Kvåle Bergesen[1], Christian Beisland[1,2], Gigja Gudbrandsdottir[1,2]
[1]Department of Urology, Haukeland University Hospital, [2]Department of Clinical Medicine, University of Bergen

Background: Fluorescence-guided cystoscopy with intravesical HAL during TURB may reduce recurrence rates for non-muscle invasive bladder cancer (NMIBC). The aim of this retrospective study was to evaluate whether use of HAL reduced the rate of malignancy at the three month follow-up cystoscopy at our institution.

Methods: We collected data from 309 patients' medical records treated with 428 TURBs at Haukeland University Hospital during 2020 and 2021. Information about histopathological urothelial tumor verification, the use of HAL and follow-up were recorded.

Results: In the cohort, 207 (48%) patients were histopathologically verified as NMIBC. During TURB, 86 (42%) received HAL in combination with fluorescence-guided cystoscopy. Preoperatively at the diagnostic cystoscopy, 36 (42 %) of the patients had a single tumor, 20 (23%) had two tumors and 30 (35%) had three or more tumors. At the three month follow-up cystoscopy 46 (22%) of all NMIBC patients had a new suspected bladder tumor. Of these, 15 (33%) had received HAL during the previous TURB, while 31 (67%) had not. The subsequent TURB, histopathologically verified cancer in 21 (46%) patients, of which six (13%) had initially received HAL. The difference in suspicion of malignancy at three month follow-up between those who did and did not receive HAL was statistically significant (p=0.04), but the difference in verified malignancy was not (p=0.86).

Conclusions: Use of HAL reduced the suspicion of malignancy at the three month follow-up cystoscopy. It did not reduce the risk of histopathologically verified malignancy at a new TURB.

24. Quality assessment of transurethral resection of bladder tumours (TURB) and association between bladder lesion appearances and malignancy: Findings from a Norwegian tertiary centre.

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[1]Department of Urology, Haukeland University Hospital, [2]Department of Clinical Medicine, University of Bergen

Background: Achieving high quality specimens at TURB is of paramount importance. We aimed to assess our practice through prevalence of cancer specimens and resection quality. The final aim was to assess association between cystoscopy lesion appearance and the histopathological (HP)-diagnosis.

Methods: Retrospective review was performed of the medical records of all patients that underwent TURB at Haukeland University Hospital in 2020 and 2021. All 428 TURB (309 patients) were included. HP-reports were used to measure rates of malignancy and presence of detrusor muscle (DM). The latter served to assess adequate resection quality. Cystoscopy appearances were classified into different subtypes according to EAU guidelines.

Results: The HP-evaluation of all specimens revealed 250 (58%) with malignancy and 177 (42%) with non-malignancy. Of those with urothelial malignancy, 214 (91%) contained DM. Of specimens with high grade cancer and pT1, 121 (95%) and 31 (82%) contained DM, respectively. DM status was missing in 16 HP-reports of malignant specimens. Of the described cystoscopy lesions, 17 (4%) were solid (sessile/nodular), 258 (64%) papillary and 99 (24%) flat. Of these, 82%, 73% and 24% were cancer, respectively. Scars were another subtype making up 8% of the material where 38% (12/32 specimens) were malignant. Overall, 22 lesions were not described.

Conclusion: A large amount of the specimens were non-malignant. Overall, the resection quality was good. Subtype appearances can be used to predict malignancy in resection specimen. It should be considered to perform more biopsies of flat lesions at the initial outpatient cystoscopy to spare patients undergoing unnecessary TURB.

25. ERAS Cystectomy Protocol with Prehabilitation Nurse in Bladder Cancer

Tuomas Jalanko[1], Heli Sammaltupa[1], Ilmari Koskinen[1], Hanna Vasarainen[1], Otto Hemminki[1], Jukka Sairanen[1]
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Background

Enhanced recovery after surgery (ERAS) protocols have been implemented in various surgical fields to improve postoperative recovery. For radical cystectomy there is limited scientific evidence to show clinical benefits of ERAS protocols.

Methods

In 2019 we implemented an ERAS protocol for radical cystectomy at our centre that included a prehabilitation nurse to enforce preoperative rehabilitation, instruct on diet, exercise and other lifestyle habits and also evaluate nutritional status and physical condition with various tests. Concurrently with the ERAS protocol initiation we conducted a prospective study to evaluate clinical outcomes of our protocol in patients with bladder cancer. For the study we enrolled 38 patients in 2019-2021 that underwent radical cystectomy with ERAS protocol and prehabilitation nurse.

Results

Median age at surgery was 71 (range, 39-83) years and postoperative follow-up time 12 (4-26) months. Of 38 patients, 31 (82 %) were male and 7 (18 %) were female. Neoadjuvant chemotherapy was given to 12 (32 %). Ureteroileal conduit was performed to 84 %, orthotopic neobladder to 11 % and ureterocutaneostomy to 3 % of patients. Median postoperative length of stay at the hospital (LOS) was 8 (7-28) days. Complication rate was 39 % and major complications (Clavien-Dindo > 2) were seen in 13 %. Readmission

rate was 26 %. The results of the tests related to the prehabilitation nurse visits will be published in the meeting.

Conclusions

ERAS protocol with a dedicated prehabilitation nurse provides good short-term clinical outcomes for patients undergoing radical cystectomy for bladder cancer.

26. C-reactive Protein and Immune-Related Adverse Events as Prognostic Biomarkers in Immune Checkpoint Inhibitor Treated Metastatic Renal Cell Carcinoma Patients

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Background There is an ongoing need to identify biomarkers for correct patient selection for immune-oncology treatments in metastatic renal cell carcinoma (mRCC). We analyzed the association between baseline C-reactive protein (CRP), on-treatment CRP and immune-related adverse event (irAE) and outcome in nivolumab-treated mRCC patients.
Methods A real-life 96 nivolumab-treated mRCC patient data was collected retrospectively. These patients' baseline CRP, on-treatment (<12 weeks) CRP and reported irAE were analyzed using Kaplan-Meier and Cox regression. The primary endpoints of this analysis were progression free survival (PFS) and overall survival (OS) for nivolumab treatment.
Results Patients with elevated baseline CRP values had worse OS and PFS when compared to normal baseline CRP values: OS 13.2 months (95% CI 7.8-18.7) vs 32.7 months (95%CI 13.6-51.8), p<0,001 and PFS 2.5 months (95% CI 2.4-2.6) vs 7.2 months (95%CI 4.1-10.3), p=0.005, respectively. Patients with elevated on-treatment CRP value also had both worse OS and PFS than patients with normal on-treatment CRP value: OS 13.2 months (95%CI 8.2-18.3) vs. 32.7 months (95%CI 16.7-48.6) p<0.001 and PFS 2.4 months (95%CI 1.89-2.84) vs. 7.2 months (95%CI 4.51-9.96) p<0.001)
In univariate survival analysis we found that patients without irAE during treatment had significantly worse both OS and PFS than patients with any irAE: OS 17.2 months (95%CI 10.88-23.53) vs. 31.47 months (95%CI 26.02-36.92), p=0.049 and PFS 2.57 months (95%CI 2.44-2.69) vs. 7.47 months (95%CI 4.09-10.84) p=0.036, respectively.
Conclusions Elevated baseline CRP, on-treatment CRP and absence of irAE correlate with poor outcome in nivolumab-treated mRCC patients.

27. Self-reported Health Related Quality of Life (HRQoL) during follow-up predicts overall survival in radically treated renal cell carcinoma (RCC) patients.

Elen Martine Hauge[1,2], Associate Professor Karin Margrethe Hjelle[2,3], Associate Professor Elisabeth G Beisland[4], Professor Hans Jørgen Aarstad[2,5], Professor Christian Beisland[2,3]
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Objective: Studies have shown that self-reported HRQoL during follow-up predicts overall survival in cancer patients. This study assesses if this also applies to a RCC population.
Methods: 278 patients, radically operated for RCC between 1997 and 2014 were identified. All included patients self-assessed HRQoL using the EORTC-QLQ-C30 questionnaire during follow-up. Neuroticism was tested using Eysenck Personality Inventory questionnaire. Data concerning patient, tumour and disease status at surgery was retrieved from the RCC database at the hospital. Updated survival data was obtained

for all patients in late 2020. All patients gave written consent for HRQoL measurement and database inclusion.
Results: 193 men and 85 females were included. Radical nephrectomy was performed in 155 and partial nephrectomy in 123. According to risk of recurrence, there were 27, 74 and 175 in the high, intermediate and low risk group, respectively. Median time (IQR) from operation to questionnaire was 2.0 (1.4-4.7) years. In univariate analyses, both high overall scores of QoL and high overall functional score predicted better overall survival. Similarly, lower risk of recurrence, younger age at assessed HRQoL and Charlson comorbidity score ≤ 2 all significantly predicted improved overall survival in univariate analyses. In multivariate Cox analyses, both high overall QoL score and high overall functional score remained independent predictors for better overall survival (HR`s, 1.8 and 1.7, respectively ($p<0.05$ for both) when adjusted for risk of recurrence, age and comorbidity score.
Conclusions: Self-reported HRQoL gives valuable information and independently predicts overall survival during follow-up in radically treated RCC patients.

28. Precision Medicine Platform with Single Cell Profiling of Pancreatic Metastasis of Clear Cell Renal Carcinoma

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Background. Pancreatic metastases (PM) of clear cell renal cell carcinoma (ccRCC) are rare, and little is known about the disease at patient level. This raises an urgent need for functional precision/personalized medicine approaches.

Methods. The aim of this study was to develop 2D/3D patient derived cancer cell (PDC) cultures, reveal genomic and single-cell transcriptional profiles, and define novel targeted treatment options for PM-ccRCC. To this aim, we used exome sequencing, single cell RNA sequencing, multiplexed IHC/IF staining with machine-learning guided image analysis, and drug sensitivity and resistance testing (DSRT).

Results. We present here the Functional Precision Medicine Platform including single-cell profiling for PM-ccRCC. First, we show that the PM-ccRCC patients enrolled in the study depicted common ccRCC driver mutations and copy number alterations, which were also maintained in the established PDCs. We also present new, enriched genomic aberrations in PM-ccRCC. Second, we reveal shared and patient -specific drug sensitivities in PM-ccRCC. Third, our pathway analysis illuminates the drug responses and proposes potential druggable pathways for future drug development.

Conclusions. Altogether, our findings suggest novel molecular profiles associated with PM-ccRCC and open new revenues for treatment of PM-ccRCC.

29. The use of renal tumor biopsies (RBx) has increased at Haukeland University Hospital (HUS) during 2008-2019

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Background: Life expectancy is increasing, as is the number of small renal masses detected incidentally. RBx is recommended to personalize treatment (surveillance, ablation or surgery), The aim of this study is to evaluate aspects of our RBx policy over the last decade.
Methods: Patients who underwent RBx at HUS between 2008-2019 are included. Data from these 257 patients and 296 biopsies were retrieved from the medical records and presented as median (IQR) or n (%).
Results: RBx was performed due to primary kidney tumor (PKT) in 188 patients and as a part of a metastatic work-up in 69. As expected, patients with PKT were older than the metastatic patients. Moreover, PKTs were smaller; 3.5 cm (2.2-5.0) vs 8.0 cm (5.8 -11.0) ($p< 0.05$). An increasing number of patients with PKT had RBx, illustrated with 10, 20, 46 and 112 patients in first, second, third and latter period, respectively. For metastatic patients, however the numbers remained stable. There was a trend towards smaller tumors the latter years. No difference in gender, laterality, ASA or core-length was found. Overall, representative RBx was achieved in 84,5% (250/296) including both primary biopsies and re-biopsies. The overall concordance in histology was 88%. None of the 56 patients with benign histology later underwent surgery. Only six patients were readmitted due to hematuria or hematomas.
Conclusions: As expected the use of RBx at our institution has increased for patients with PKT. Representativeness of the RBx and correlation to final histopathology is in line with the published literature.

30. Renal functional outcome after nephron sparing treatment of renal cell carcinoma: a systematic review

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Background: The incidence of renal cell carcinomas increases, and the treatment continuous to evolve.
Purpose: To explore renal functional outcome after laparoscopic partial nephrectomy (LPN), robotic assisted partial nephrectomy (RAPN), and computed tomography (CT)-guided cryoablation for T1 renal cell carcinoma.
Materials and methods: A systematic search was conducted in OVID Medline, Embase, and Cochrane Library, May 2021. Inclusion criteria: Reporting baseline and ≥3 months posttreatment renal function after LPN, RAPN, or cryoablation for T1 renal cell carcinoma. Exclusion criteria: Ischemic time >30 minutes and LPN and RAPB performed before 2010. Quality assessment was performed with a modified New Castle Ottawa Scale by two independent assessors.
Results: The search yielded 4,875 studies. In total, 434 studies were full text screened, 42 studies were included. Total 2,829 patients were treated and data from 1,542 LPN, 721 RAPN, and 566 cryoablation were analysed. Compiled eGFR reduction divided by treatment type were -7.08±5.07 mL/min/1.73m2 for RAPN, -7.60±3.23 mL/min/1.73m2 for LPN, and -4.28 ±5.96 mL/min/1.73m2 for cryoablation and were non-significant within nor between the groups using one-way ANOVA, p=0.242. Mean tumour size was almost equal; 31.9±6.3 mm for RAPN, 32.7±9.3 mm for LPN, and 31.4±9.1 mm for cryoablation, and RENAL nephrometry score not statistical different. Quality assessments were highest among RAPN studies, 5.0±2.5 stars versus 4.7±1.9 for LPN and 3.7±1.0 for cryoablation studies.
Conclusion: This review with only three RCT indicates that both LPN, RAPN, and cryoablation for T1 renal cell carcinoma have a high renal functional preservation with no significant difference between the reduction.

31. Detection of human papillomavirus DNA in penile carcinoma does not convey prognostic information regarding patient survival

Christian Arvei Moen[1], Tor Kristian Thorkelsen[1], Oline Eriksen Rio[2], Alfred Honoré[1], Adeel Asghar Chaudhry[1], Patrick Juliebø-Jones[1], Leif Bostad[3,4], Christian Beisland[1,4]
[1]Department Of Urology, Haukeland University Hospital, [2]Section for Cancer Genomics, Department of Laboratory Medicine and Pathology, Haukeland University Hospital, [3]Department of Pathology, Haukeland University Hospital, [4]Department of Clinical Medicine, University of Bergen

Background: Human papillomavirus (HPV) infection is a known risk factor for development of penile cancer. It remains inconclusive as to whether patients with HPV-related penile cancer have a different prognosis than those without. The aim of this study was to investigate the prevalence of HPV positive penile squamous-cell carcinomas (SCC) in Western Norway as well as the relationship between HPV status and survival.

Methods: The local diagnostic biobank was screened for stored tissue samples from patients previously operated for invasive penile cancer at our institution. HPV polymerase chain reaction (PCR) test was performed on eligible samples. Thus far, HPV status has been determined for 127 patients who underwent operative surgery between 1975-2020. Hospital records of these patients were retrospectively analysed. Clinical variables and course together with histopathological characteristics and HPV status were recorded.

Results: HPV DNA was detected in 47%(n=60) of the tumours. HPV-16 was the most common subtype, occurring in 73%(n=44) of the HPV positive carcinomas. Disease-specific 5-year survival in HPV positive and HPV negative patients were 74% vs. 84%, respectively (log-rank test p=0.28). In multivariable Cox regression with adjustment for age, tumour stage and nodular stage, HPV status was not an independent predictor for survival (HR 1.12, 95% CI (0.49-2.56), p=0.8 for HPV positive vs. negative status).

Conclusions: HPV DNA was found in about half of the investigated penile carcinomas. HPV-16 was the most common subtype. There was no significant difference in disease-specific survival between patients with HPV positive and HPV negative tumours.

32. Postoperative short-term complications after organ-sparing surgery for penile cancer and intraepithelial neoplasia

Christian Arvei Moen[1], Tor Kristian Thorkelsen[1], Alfred Honoré[1], Adeel Asghar Chaudhry[1], Patrick Juliebø-Jones[1], Leif Bostad[2,3], Christian Beisland[1,3]
[1]Department Of Urology, Haukeland University Hospital, [2]Department of Pathology, Haukeland University Hospital, [3]Department of Clinical Medicine, University of Bergen

Background: According to EAU guidelines on penile cancer, the incidence of complications after organ-sparing surgery is not fully reported. This study investigates the incidence of short-term postoperative complications after organ-sparing surgery for penile cancer and intraepithelial neoplasia (PeIN) at our tertiary centre.

Methods: Between 1980-2020, 198 patients underwent primary organ-sparing surgery for penile cancer (n=156) or PeIN (n=42). Patients were divided into 4 groups (Grp1-4) based on extent of surgery: local excision (LE) with or without sentinel node biopsy (SNB) (Grp1, 104 patients), partial amputation (PA) with or without SNB (Grp2, 43 patients), LE/PA with inguinal lymphadenectomy (Grp3, 27 patients) and LE/PA with both inguinal and pelvic lymphadenectomy (Grp4, 24 patients). Complications within 30 days of surgery (short-term) were recorded and graded according to the Clavien-Dindo (CD) system. A retrospective analysis was performed.

Results: No perioperative deaths occurred. For all CD grade≥3 (23 cases), no significant change in incidence was found over the study period (p=0.17). All-cause short-term complications occurred in 30% of the patients and were significantly different between groups (p<0.001), being lowest in Grp2(9%), followed by Grp1(20%), while complications were more common in Grp3-4(67% both). Most complications were minor and CD grade≥3b occurred in only 7 patients. For Grp1-2, the most common complication was penile wound infection while in Grp3-4, it was groin wound infection.

Conclusions: Organ-sparing surgery for penile cancer and PeIN is a relatively safe procedure with low mortality, independent of the extent of surgery. Short-term minor postoperative complications are common while severe complications are rare.

33. Methodological Quality of Systematic Review Published in the Urological Literature (2016-2021) Fails to Improve

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Background: Prior studies have suggested that few systematic reviews (SRs) published in the urological literature provide reliable evidence. We performed this study to provide a longitudinal analysis of the methodological quality of SRs.
Methods: As an extension of prior study with a written a priori protocol, we systematically searched and analyzed all SRs related to therapy/prevention published in the five major urology journals. We used the AMSTAR-2 instrument to assess SR quality and performed pre-planned statistical hypothesis testing by time-period and journal of publication in SPSS Version 27.0.
Results: Our updated search (2019-2021) identified 480 references of which 98 ultimately met inclusion criteria, which we added to the database of the prior 144 studies (2016-2018). The largest contributor by journal for 2019-2021 was the WJU (31; 31.6%) whereas it had previously (2016-2018) been Eur Urol (53; 36.8%). Oncology (44; 44.9%) and voiding dysfunction (20; 20.4%) remained the two leading topic areas. Overall, only six (2.5%) and eight SRs (3.3%), achieved a high (no critical weakness; up to one non-critical weakness) or moderate (no critical weakness; more than one non-critical weakness) confidence rating. Most SRs published had very low confidence rating (186; 76.9%). The proportion of studies with a high or moderate rating (6.1% versus 4.9%; p = 0.175) did not increase over time.
Conclusions: Most SRs published in the urological literature continue to have serious methodological limitations and should not be relied upon. There is a critical need for raising awareness and promote improvement.

34. Do European Association of Urology (EAU) guidelines adhere to Grading of Recommendations, Assessment, Development and Evaluation (GRADE) methodology?

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[1]University Of Minnesota and Minneapolis VAMC, [2]Servicio de Urología. Hospital Universitario 12 de Octubre

Background: EAU guidelines represent the most influential clinical practice guidelines (CPGs) in Europe and are endorsed by many other societies. Since 2018, EAU guidelines have adopted a modified GRADE approach. Our goal was to evaluate the adherence of EAU guidelines to established GRADE methods.
Materials and Methods: We searched and analyzed the 21 EAU guidelines published in 2021. We excluded the thromboprophylaxis guideline as it followed a unique methodology and structure. Two independent reviewers performed manual extraction of all recommendations and summary of evidence statements.
Results: We included 20 unique CPGs which formulated a total of 1700 recommendations of which 1164 (68.5%) were 'strong' recommendations and 536 (31.5%) were 'weak' (or 'conditional'; see Table). The

number of recommendations per CPGs ranged from 15 (Primary Urethral Carcinoma) to 202 (Sexual and Reproductive Health). The proportion of 'strong' recommendations ranged from 31.3% (Bladder Stones) to 100% (neuro-urology). Oxford CEBM levels of evidence were reported as level 1, 2 or 3 in 57.2%, 41.3% and 1.5% of the time, respectively. Guideline recommendations were rarely linked explicitly to the underlying body of evidence. Considerations central to the GRADE, including ratio of benefit-to-harm, and assumed values and preferences were not well-described.
Conclusion: EAU guidelines include a large proportion of strong recommendations. The underlying bodies of evidence are not assessed using the certainty of evidence framework and deliberations about other GRADE domains for formulating recommendations are not explicit. Increased efforts to adhere to GRADE are warranted to increase transparency, improve guideline adoption and enhance patient care.

35. The effect of low pneumoperitoneum during robot-assisted radical prostatectomy (RARP) on quality of recovery and post-operative pain. Preliminary results of a randomized clinical trial.

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Background:
To date, many different surgical procedures are carried out with an intraabdominal pressure (IAP) of 12-15 mmHg, even though international guidelines recommend the use of the lowest IAP. This is the 1st double-blinded RCT that investigated the effect of low pneumoperitoneum on postoperative quality of recovery after robot-assisted radical prostatectomy (RARP).

Methods:
100 patients meeting the inclusion criteria were randomly assigned to two groups: Low IAP (patients operated with low IAP of 7 mmHg) and Standard IAP (patients operated with standard IAP of 12 mmHg). The primary endpoint was the improvement in quality of recovery measured by the total score of the QoR-15 questionnaire (0-150 points) before operation and at day 1,3,14,30 post-operatively. Other outcome measures postoperative opioid consumption, shoulder tip pain, abdominal pain, and pain around the surgical incision measured using the visual analogue scale (VAS).
Results:
There was a clinically significant difference in QoR-15 score between groups both on day 1, and day 3 postoperatively. Day 1 Low IAP 128 (95%CI 124-133) vs. 116(95%CI 112-120) for Standard IAP, P-value:0.0001. Day 3 128(95%CI 124-132) vs. 120(95%CI 116-124) P-value 0.02 The differences were 12 on day 1, and 8 on day 3. The minimum reported clinical difference is 8. There were no differences in QoR-15 on day 14 and 30, nor on shoulder tip pain, pain at the incision site, or abdominal pain between groups.

Conclusion:
Patients operated under low pneumoperitoneum can regain their preoperative physical and psychological condition faster than those operated under standard pneumoperitoneum.

36. Live donor kidney transplantation in Iceland 2003–2019: Survival and surgical outcomes

Thordur Pall Palsson[1], Johann Jonsson[1,2], Rafn Hilmarsson[1,3], Arni Saemundsson[1], Margret B. Andresdottir[1,3], Olafur S. Indridason[1], Runolfur Palsson[1,3], Eirikur Jonsson[1,3]
[1]Landspitali- The University Hospital of Iceland, [2]Inova Fairfax Hospital Transplant Center, [3]University of Iceland

Background

A live donor kidney transplantation program was launched in Iceland in 2003, in collaboration with a transplant surgeon based in the USA. The aim of this study was to evaluate outcomes of this program.

Methods

This retrospective observational cohort study included all live kidney donors and recipients in Iceland 2003-2019. Data were obtained from medical records. Patient and graft survival were estimated using the Kaplan-Meier method and the Clavien-Dindo (CD) system was used to classify surgical complications.

Results

A total of 116 kidney transplants were performed (7.25 transplants/21 pmp yearly average) and 72 of the recipients were men with a median (range) age of 46.5 (3-76). Thirty-nine (33.6%) recipients experienced a total of 53 surgical complications within 90 days of the transplant surgery, of which 17 (32%) were CD grade 3 and two (3.8%) grade 4. Ten (8.6%) patients underwent reoperation within 30 days. Seventeen recipients experienced graft loss, eight due to death with a functioning graft. One-, five- and ten-year overall patient survival was 100 %, 96.6% (93.0-100) and 90.2% (83.4-97.5), respectively. One-, five-, and ten-year death censored graft survival was 99.1% (97.5-100), 98.1% (95.6-100), and 93.6% (88.1-99.4), respectively. Of the donors (61 men, age 47.5 (22-72)), 25% experienced a complication within 90 days of the operation, all but one with CD grade ≤2.

Conclusions

Patient and graft survival and surgical outcomes are comparable to outcomes at larger centers, demonstrating the feasibility of running a quality transplant program in a small country in collaboration with a larger center.

37. To cystoscopy in the Department of Urology – an education program for introduction physicians

RN Birgitte Uldal[1], Clinical Nurse Specialist, MCN Beritt Pedersen[2]
[1]Urology Department at Aalborg University Hospital, [2]Urology Department at Aalborg University Hospital

Background
The reason for this initiative is based on a suggestion from a physician. In relation to her fellowship regarding “New Aalborg University Hospital” there was a wish for introduction physicians to feel well equipped to cystoscopy independently and thereby be able to take care of more patients. The experienced and specialized registered nurses experienced that the introduction physicians felt ill equipped to cystoscopy patients. In addition, they handled the cystoscopy inappropriately and had no or minor understanding of the course with cystoscopy.
Aim
To compose an introduction program for introduction physicians to make them be capable of cystoscopy patients and manage a cystoscopy safely and get a more comprehensive view of the course with cystoscopy
Methods
Registered nurses composed an introduction program that was offered to all introduction physicians in the Department of Urology. They received teaching with theory for two hours and 1-2 days of clinical supervised cystoscopy. A short questionnaire was completed regarding their expectations and whether their needs were met.
Results
The results demonstrate that the teaching and the supervised education meet the physicians’ expectations and needs.
Conclusions

The course with cystoscopy is requested by other physicians than the introduction physicians. We hope that this course could be offered to everyone who needs such a course. This could contribute to brand the Department of Urology, increase patient safety, save costs, and maybe recruit and retain physicians.

Poster session 3
Friday, June 10 at 16:45 – 17:45

38. How is the outcome after TUMT (Transurethral microwave thermotherapy)?

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Background:
There is an increasing incident of lower urinary tract symptoms (LUTS) and urine retention (UR) caused by benign prostate hyperplasia (BPH) due to the ageing male population. The objectives were to assess the efficacy and safety of TUMT.
Methods:
Medical records were reviewed in men treated with TUMT in the period from January 2012 to December 2020. The data before treatment, treatment, and follow-up were recorded for total 189 patients. We evaluated the patients' satisfaction, DAN-PSS score and clinical symptoms including uroflowmetry parameters, complications, rate of treatment failure, and referral to retreatment. The study was accepted by the national protection agency.
Results:
The age of men with LUTS was 76 years old (SD: ± 7) and for UR 78 years (SD: ± 7). Patients' satisfaction showed a significant reduction in symptoms score with a pre-treatment median score of 28.5 to a median score of 13 post-treatment. There was a significant better flow after treatment (UR from 7.98 m/s to 11.72 m/s ($P<0.05$), and LUTS-group (from 7.73 m/s to 12.91 m/s).
Total 46 (66%) of the 70 men with UR and 79 (66 %) of the 119 men in the LUTS-group reported satisfaction at follow-up. Twelve men (17 %) in the UR-group and 18 men (15 %) in the LUTS-group were referred to retreatment. In total, 56 cases (29%) had a complication. Only one patient with scrotal abscess was treated surgically.
Conclusion:
TUMT is an effective and relative safe procedure with a significant improvement in uroflow.

39. Surgery for male stress incontinence with Artificial Urinary Sphincter (AUS) at Haukeland University Hospital (HUS) 2012 -2021- how are we doing?

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[1]*Department Of Clinical Medicine, University Of Bergen,* [2]*Department of Urology, Haukeland University Hospital*

Background: Men with stress incontinence have been treated surgically with implantation of the AUS at HUS since June 2012. We aimed to evaluate our practice and results the first ten years.

Methods: Until April 2021 we have identified 127 AUS patients. The device was implanted through a perineal incision in general anesthesia with antibiotic prophylaxis. All data are retrieved from the medical records as part of a registered quality audit. Median follow-up is 4.5 years.

Results: Incontinence in the AUS group was related to radical prostatectomy in 117 (92%), TURP in 7(6%) and neurological conditions in 3 (2%), with 2.5 years median time to index AUS implantation. Preoperative investigations showed mild, moderate and severe incontinence in 9, 29 and 72 patients, respectively (based on 3-days pad weight tests). Preoperative cystoscopy and cystometry has been mandatory, and was abnormal in 16% and 9%, respectively. Forty patients (34%) had undergone prior radiation and 31 patients (23 AUS/8 ATOMS) had re-do incontinence surgery. Postoperatively 109 patients (86%) left the hospital the day after surgery; but patients with LUTS (11), scrotal hematoma (3), pain (2), pneumonia (2) stayed 2-8 days. Overall complication rate was 34%, included the above, infections after discharge (11 patients), unsatisfactory continence and later erosions (11 patients). 84 patients did not have any complaints. No significant correlation between complications and comorbidities (i.e diabetes, hypertension, heart disease), prior radiation, BMI, cuff size or age has been observed.

Conclusion: Ten years after start-up of AMS 800 implantation, our results seem to be acceptable.

40. A randomized multicenter trial comparing Photoselective Vaporization of the Prostate (PVP) to Bipolar Transurethral Resection of the Prostate (TURP)

Hannu Koistinen[1]
[1]*Helsinki University Hospital*

Introduction
TURP has been considered the gold standard for obstructivesymptoms secondary to benign prostatic hyperplasia (BPH). PVP has emerged as an option and is now widely accepted for treatment of BPH. The purpose of this study was to compare the efficacy and safety of PVP (120W) to TURP in a multicenter.

Methods
A total of 219 patients were recruited in five centers performing both PVP and TURP in 2011-2014. After the procedure, the length of catheterization and hospital stay as well as complications were evaluated. All patients were evaluated preoperatively and three, six and 12 months postoperatively. At every visit, IPSS (International Prostate Symptom Score), maximum flow rate (Qmax) and post-voiding residual (PVR) were recorded. Length of catheterization and hospital stay were analyzed.

Results

A total of 98 patients were eligible for TURP and 109 for PVP of which 86 (87.8%) and 99 (90.8%) patients attended the twelve-month follow up visit. At 12 months after the procedure, Qmax and PVR both improved significantly compared to baseline. Mean Qmax, PVR, total IPSS points or quality of life did not statistically differ between trial arms at any follow-up visit. The length of catheterization and hospital stay favored PVP. A total of 10 (10.2%) TURP patients and three (2.8%) PVP patients had a significant complication ($p = 0.027$) due to bleeding favoring PVP.

Conclusions
During the 12-month follow-up, both treatments were similarly effective in treating BPH symptoms. However, the length of catheterization and hospital stay and rate of postoperative complications favored PVP.

41. The clinical value of a routine urine culture prior to transrectal prostate biopsy – a population-based register study

Joakim Örtegren[1,2], MD Anna Wimmerstedt[4], M.D, Ass. prof Håkan Janson[3], M.D, PhD Henrik Kjölhede[2,5], M.D Gunnar Kahlmeter[3], Professor Ola Bratt[2,5]

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Background
As part in a antimicrobial stewardship program, a routine urine culture prior to prostate biopsy has since 2015 been the standard practice in our region. In this population-based register work we study if a clinical routine with urine culture prior to prostate biopsy lead to a decrease in infectious complications and increased use of targeted prophylactic antibiotic therapy.
Material and methods
All men in Kronoberg County who had an outpatient transrectal prostate biopsy at Växjö Regional Hospital, Ljungby Hospital or Gränsbygdskliniken from 1st January 2010 to 31st December 2019. Study period was divided into a urine culture period from 1st January 2015 to 31st December 2019 and a control period from 1st January 2010 to 31st December 2014. Data was collected from electronic medical records Cambio Cosmic and all cultures were retrieved from Department of Clinical Microbiology.
Results
5789 outpatient prostate biopsy procedures in 4041 men were included for analysis. Infection after prostate biopsy were more common during the urine culture period (5.1%) than during the control period (4.3%, p = 0.17). Inpatient care for infection after prostate biopsy was also more common during urine culture period (3.5% versus 2.2%, p = 0.02). The routine did identify 160 men with asymptomatic bacteriuria but rate of infectious complications was similar to that of the total urine culture period.
Conclusions
The routine with a urine culture did not lead to fewer post biopsy infections. It did identify asymptomatic bacteriuria to target antibiotic prophylactic treatment but that did not decrease infectious complications.

42. Pelvic lymph node dissection during robotic assisted laparoscopic prostatectomy at Oslo University Hospital

MD Aydin Dadfar[1], MD-PhD Viktor Berge[1,2]
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Background: Pelvic lymph node dissection (PLND) during robotic assisted laparoscopic prostatectomy (RALP) provides information about staging and prognosis. Yet, PLND has not shown improved oncological outcomes. The aim of this study was to compare surgical outcomes between patients treated with RALP and PLND with patients treated with RALP only (non-PLND).
Methods: This was a historical cohort study including patients who were treated with RALP between 2014 and 2019 at Oslo University Hospital (OUH). The patients were identified through the radical prostatectomy registry at OUH.
Results: A total number of 1675 RALP patients were consecutively included, whereas 472 (28 %) were treated with PLND. Median follow-up time was 22 months. Free surgical margin was observed in 70 % in the PLND group and in 81 % in the non-PLND group.
Mean hospitalization time for both groups were two days. Mean operative time was respectively 161 and 125 minutes for the PLND and non-PLND group. In the PLND group, 11 % (52/472) had a complication that needed intervention (Clavien Dindo grade 3). Equivalent rate was 2 % (20/1203) in the non-PLND group. Lymphocele was the most common complication (5 %) in the PLND group. Among the PLND group, more patients had biochemical recurrence and salvage radiation treatment during follow-up.
Conclusions: Patients treated with PLND and RALP had higher histological grade group and less free margin. The PLND group had also more postoperative Clavien Dindo grade 3 complications. There was a higher proportion of biochemical recurrence among the PLND group.

43. Diagnostic and health economic implications of introducing the Stockholm3 test for prostate cancer detection in a Finnish context.

MD,PhD Henrikki Santti[1,2,3], MD,PhD Mika Matikainen[2,3], MD,PhD Kristina Hotakainen[1,3]
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Background

Several studies have shown that a new test called Stockholm3 reduces unnecessary biopsies without compromising the detection of clinically significant prostate cancer. The aim of this study was to compare the distribution of test results in a Finnish clinical cohort investigated for prostate cancer and to extrapolate these results to enable decisions on further implementation of Stockholm3 in Finland.

Methods

Patients who were scheduled for a PSA test at Mehiläinen's healthcare facilities in Finland were asked to donate blood and answer five clinical questions. The blood from men with PSA ≥ 1.5 ng/mL were analyzed with Stockholm3, but patients or physicians did not receive the test result. Clinical outcomes were retrieved for men with PSA ≥ 3.0 ng/mL.

Results

1,310 men were included in the study. 261 men had PSA 1.5 - 3.0 ng/mL and 212 men had PSA ≥ 3.0 ng/mL. Stockholm3 Risk Score was ≥ 11% in 32 (12.3%) men with PSA 1.5 - 3.0 and 105 (49.5%) men with PSA ≥ 3.0 ng/mL. 23 (11.0%) men with PSA ≥ 3.0 ng/mL were referred to MRI or biopsy in normal clinical practice.

Conclusions

The results were comparable with data from the studies in Norway and Sweden. The study indicates that by using Stockholm3 instead of PSA cut-off value of 3, the number of men undergoing MRI or biopsies could be reduced. The medical benefits by replacing PSA with Stockholm3 can be achieved at the same cost or potentially at a reduced cost.

44. Expected impact of the interreader variability among urologic pathologist on ProScreen prostate cancer screening trial: a pre-trial validation study

Ronja Hietikko[1,2], Tuomas P. Kilpeläinen[1,2], Teemu Tolonen[3], Anne Räisänen-Sokolowski[4], Stig Nordling[2], Jill Hannus[3], Marita Laurila[3], Kimmo Taari[1], Teuvo LJ Tammela[5], Kari Natunen[6], Anssi Auvinen[6], Tuomas Mirtti[2,4], Antti Rannikko[1,2]
[1]Department of Urology, University of Helsinki and Helsinki University Hospital, [2]Research Program in Systems Oncology, Faculty of Medicine, University of Helsinki, [3]Fimlab Laboratories, Department of Pathology, Tampere University Hospital, [4]HUSLAB Laboratory Services, Department of Pathology, HUS Helsinki University Hospital, [5]Department of Urology, Tampere University Hospital, [6]Faculty of Social Sciences, Tampere University

Background
Prostate cancer (PCa) screening remains controversial due to the high risk of overdiagnosis of clinically insignificant PCa. We have initiated a population-based randomized screening trial (ProScreen) where our aim is to retain the benefit (PCa specific mortality reduction) and minimize the harm (overdiagnosis). In the ProScreen trial only men with PSA ≥3 ug/l, 4Kscore of ≥7.5% and PI-RADS lesions 3-5 in MRI will undergo targeted biopsies. The aim of this subinvestigation is to assess the potential impact of the interreader variability among urologic pathologist on the ProScreen trial.
Methods

From June 2014 to May 2018, 86 men with clinical suspicion of PCa based on the magnetic resonance imaging in Helsinki University Hospital underwent targeted biopsy of the prostate. For the current study, six pathologists individually reviewed the pseudonymized pathology slides of prostate needle biopsies in the two ProScreen trial centers (Helsinki and Tampere). The five-tier ISUP Grade grouping (GG) system was used. Fleiss' kappa (κ) was used to estimate combined agreement between all individual pathologists.
Results
Interreader agreement for cancer vs. benign (GG 1-5) was very good (κ 0.90) and for clinically significant cancer (GG 2-5) it was good (κ 0.72). Further for the more aggressive cancers (GG 3-5, GG 4-5) interreader agreement was good (κ 0.72, κ 0.68).
Conclusion
Interreader agreement of pathology reports was good to very good in this pre-trial validation study. The contemporary Grade grouping system appears to be reproducible and the agreement between study uropathologists good at minimum.

45. Prospective validation of a combined urine and plasma test for predicting high grade prostate cancer in biopsy naïve men.

MD Torben Brøchner Pedersen[1], MD, PhD Mads Hvid Poulsen[1,2,4], MSc, PhD Martin Lund[1,3], MSc Søren Feddersen[3], MD Maher Albitar[5], MSc Charlotte Aaberg Poulsen[1], MSc Louise Dorner Østergaard[1], DMSc, MD Lars Lund[1,2,4]
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Background:
Pivotal to the successful treatment of localised prostate cancer is establishing an early diagnosis. Diagnosing prostate cancer requires histopathological confirmation by direct biopsy from the prostate gland. This procedure has inherent risks and may yield false negative results. Selecting patients for biopsy thus requires knowledge of the patients risk. Novel biomarkers have potential to aid in this critical step of the diagnostic pathway. We aim to externally validate a previously developed urine and plasma biomarker algorithm in a prostate biopsy naïve cohort.
Methods:
Urine and blood samples were prospectively collected from 331 men suspected of prostate cancer prior to undergoing transrectal prostate biopsies. Biopsy naïve men with no known prostate cancer diagnosis were included. The expression mRNA levels of a 10 gene panel were quantified by real-time polymerase chain reaction in urine and plasma. Gene quantities combined with clinical features and plasma PSA levels were used to predict the presence of International Society of Urological Pathology (ISUP) grade group ≥ 2 prostate cancer.
Results:
Complete data was available for 314 patients and 93 had ISUP grade group ≥ 2. Sensitivity and specificity was 87.1% (95% CI: 78.5%-93.2%) and 42.1% (95% CI: 35.5%-48.9%) respectively. Receiver operating characteristics area under curve was 0.756 (95% CI: 0.699-0.813) for algorithm probability and 0.651 (95% CI: 0.589-0.713) for PSA (p=0.02). Test negative predictive value was 88.6% (CI: 80.9%-94%).
Conclusions:
The original excellent performance metrics were not replicated in the present external validation study. Algorithm improvement is necessary before attempting clinical implementation.

46. Moved to poster session 1

47. Long-term follow-up of AdVance/AdVanceXP sling for stress urinary incontinence

Rebecca Bøe[1], Dr Ole Jacob Nilsen[1], Dr Henriette Veiby Holm[1]
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Background
The AdVance and AdVanceXP slings (AS) are established treatment options for male stress urinary incontinence (SUI) but long-term results are sparse.
Objectives: To evaluate the long-term effect, complications, and patient satisfaction with the AS at our institution.

Methods
Patients who had an AS implanted due to SUI were identified retrospectively. Demographic and perioperative data were extracted from electronic patient files. Long-term follow-up included a mailed questionnaire with the Expanded Prostate cancer Index Composite (EPIC-26) for urinary assessment and questions regarding patient satisfaction.

Results
The AS was implanted in 165 patients 2009-2016, mainly due to mild to moderate SUI (median 112, range 13-589 g/24h). Preoperative urodynamics showed normal bladder function in 151 and mild detrusor overactivity (DO) in 11.

At the 6-week follow-up 144 patients (87%) were defined as cured (0-1 safety pad/day). The most common early complication was urinary retention (n=38), transient in 32 (1-42 days). Recurrence of incontinence was noted in 36 patients during follow-up, of whom 26 were reoperated.

The questionnaire was sent to 125 patients and 115 (92%) replied at a median of 107 (43-202) months postoperatively. Ninety-one (79%) used 0-1 pads/day, 97 (85%) were satisfied, one patient reported pain. Failure was associated with higher age and more leakage preoperatively and at the 6-week follow-up. Mild DO did not affect outcome.

Conclusions
The AS shows good and persistent long-term results in patients with mild to moderate SUI. Few patients had mild DO preoperatively and it did not affect long-term outcome.

Poster session 4
Friday, June 10 at 16:45 – 17:45

48. Genitourinary Gun Violence Injuries in Muskegon, Michigan: Targeting Prevention

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Background: Gun Violence (GV) is an ongoing public health issue in the United States. We reviewed a series of GV cases, with and without Genitourinary (GU) injuries, treated in Muskegon, Michigan to assess the impact of these injuries on patients and healthcare utilization.

Methods: Mercy Health Muskegon (MHM) Level II Trauma Center diagnostic codes were searched between the dates of May 1, 2015, and June 30, 2019, for GV injuries. Patient demographics, Injury Severity Score (ISS), and length of stay (LOS) were abstracted. Hospital charges were obtained from the MHM Finance

Department. The Fisher's Exact Test was utilized for comparisons of categorical data and the t-test or Mann Whitney were utilized for quantitative data. Significance was assessed at $p<0.05$.

Results: 199 patients met inclusion criteria. 14/199 (7.0%) patients sustained injuries to the GU tract. Of these patients, 12/14 (86%) also sustained concomitant non-GU organ injuries. Young, black men were the primary victims of gun violence in both groups. Patients with GU GV injuries had statistically higher ISS, 14 vs. 6 ($p <0.001$), longer LOS, 7 vs. 1 day(s) ($p <0.001$), and higher hospital changes, $58,462 vs. $8,789 ($p<0.001$), when compared with the non-GU injury group.

Conclusions: Urologists at MHM treat a wide range of GV injuries that disproportionally effect young, Black men. In this retrospective study, GV injuries with GU involvement were significantly more severe and resulted in significantly longer hospitalizations and higher hospital charges. Patients in our community stand to benefit from further urologist-lead GV research and prevention efforts.

49. Delayed diagnosis of iatrogenic ureteral injuries causes significant morbidities for the patients. Results from a retrospective study at Haukeland University Hospital, Bergen, Norway

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Background: Iatrogenic ureteral injuries can cause significant morbidities. The aim of this study was to register and analyse outcomes after ureteral injuries treated at our hospital with special emphasis on potential consequences of a delayed diagnosis.

Methods: 108 patients treated for an iatrogenic ureteral injury during 2001-2021 were included in the study. Endourological, injuries necessary due to tumour resection and traumatic injuries (two) were excluded. Demographic information, time of injury, type and time of repair, length of hospital stay, number of hospital admissions awaiting final surgery and final outcome was registered. Chi-square and Mann-Whitney U-test analyses were performed to assess predictors for delayed diagnosis and post injury morbidities.

Results: Most injuries, 74 (69%) occurred during gynaecological surgery. Of the injuries, 47 (44%) were not recognized preoperatively (delayed diagnosis), and 30 (28%) occurred during laparoscopic/robotic surgery. Patients with a delayed diagnosis had a higher number of injury related hospital admissions (mean 3.0 vs 0.8, $p<0.001$) and longer hospital stays (mean 18 vs 6.4 days, $p=0.001$) compared to patients who had their injuries diagnosed peroperatively. Median (IQR) time from injury to final surgery for patients with a delayed diagnosis was 3.7 (2.3-5.4) months. Patients sustaining their injuries during laparoscopic/robotic surgery had a higher risk of delayed diagnosis (60% vs 37%, $p=0.05$). Complete recovery was achieved in 101 (92%) of the patients.

Conclusions: A delayed diagnosis of an iatrogenic ureteral injury may cause major morbidities for the patients even if final prognosis is good. Laparoscopic/robotic surgery increases the risk of delayed diagnosis.

50. The Who, What, When and How of Blunt Penile Trauma - a five year retrospective study from a Danish University Hospital

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Background
Penile fracture (PF) is a traumatic rupture of the tunica albuginea.

The purpose of this study was to identify and assess patients referred with blunt penile trauma, including PF, during a five-year period.

Methods
In this retrospective analysis of patient records, we identified patients using ICD-diagnosis of Penile Hematoma (DN488E), Penile Contusion (DS302B) or Penile Fracture (DS302P).
Patients referred to Aarhus University Hospital from december 2016 to december 2021 were entered in a RedCap database including information on demographics, symptoms, cause of trauma, treatment and functional outcome.

Results
In total 41 patients were referred. Six patients were excluded due to lack of penile trauma in the history. Twelve patients were diagnosed with PF. All were treated surgically with suturing of the rupture. The most common cause of blunt penile trauma was intercourse (77%).
All patients with PF experienced discoloration and penile swelling. A snap was heard by seven of the patients with PF but also ten of the patients without penile fracture.
Ultrasound of the penis was used in 18 patients. Most penile trauma occurred from 6 pm to 6 am (57%).
Postoperative erection enabling full intercourse was achieved with 72,7% (8/11) of the patients.

Conclusion
Radiological examination guided the treatment decision in more than half of the patients.
All PF were treated surgically. Most penile hematomas and hematomas were treated conservatively.
Functional outcomes were good.

51. Renal temperatures and thermal profiles during ureteroscopy with thulium fiber laser and holmium:YAG laser

Mathias Æsøy[1], Patrick Juliebø-Jones[1,2], Christian Beisland[1,2], Øyvind Ulvik[1,2]
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Background: The threshold for thermal cellular injury, 43°C, could be exceeded during ureteroscopic laser lithotripsy. The aim of this study was to compare temperature profiles in both renal pelvis and renal parenchyma during Thulium fiber laser (TFL) and Ho:YAG laser activation using different power settings and fiber sizes.
Methods: Three porcine kidneys with intact renal pelvis and proximal ureters were used for the experiment. A temperature sensor was inserted through a nephrostomy tube into the renal pelvis and a second sensor was inserted directly into the renal parenchyma. Temperatures were recorded during laser activation for 180 seconds, and for another 60 seconds after deactivation. TFL (150µm and 200µm) and Ho:YAG (270µm) laser delivered energy at settings of 2.4W, 8W, 20W and 30W.
Results: Intrapelvic temperatures correlated directly to power settings. Higher energies produced higher temperatures. For example, using a 150µm fiber at 2.4W resulted in a 2.6°C rise from baseline (p=0.008), whereas using the same fiber at 20W produced a rise in temperature of 19.9°C (p=0.02). Larger laser fibers caused significantly higher temperatures compared to smaller fibers using equivalent power settings, e.g. mean temperature at 20W using 150µm was 39.6°C compared to 44.9°C using 200µm, $p < 0.001$. There was a significant increase in parenchymal temperatures when applying 20W and 30W of laser power with the two larger fibers.
Conclusion: Careful attention should be paid to avoid thermal injuries when using lasers with high energies (≥20W) and fiber sizes ≥200 µm. Low laser settings are therefore recommended during ureteroscopic lithotripsy.

52. Safety and Efficacy of Ureteroscopy in Pregnancy under Local Anaesthesia and Sedation: Outcomes from a retrospective cohort study

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Background
Management of suspected kidney stone disease in pregnancy is challenging. Ureteroscopy (URS) is a recognised diagnostic and therapeutic intervention. There
have been only limited reports of performing this under local anaesthetic (LA) and sedation. Our aim was to investigate the safety and outcomes associated with performing URS during pregnancy as the technique has evolved at our centre.

Methods
Retrospective review of records was carried out to identify pregnant patients undergoing URS at our tertiary centre between 1984-2021. Requirement for ethical
approval was cleared by the Regional Committee. Outcomes of interest included anaesthetic status, endoscopic findings, stent usage, operative time, hospital stay and complications.

Results:
86 patients underwent 95 URS procedures. Overall, 58 (n=55) were achieved with LA and sedation. During the most recent decade, the latter was successfully carried out in 94% of procedures. 56% (n=48) of the whole study group had ureteral calculi found at the time of surgery and in 90% (n=43) of these cases, fragmentation/extraction was performed. Mean operative time and post-procedure
hospital stay was 32.5 minutes (range 7-100) and 2.2 days (0-16), respectively. Overall intra-operative and post-operative complication rate was 2% and 11%, respectively. During the final decade, the latter improved to 6% and all adverse events were minor (Clavien I/II).

Conclusion
It is not only safe to perform URS during pregnancy, but it can also be achieved under LA and sedation. Development of a local protocol and multi-disciplinary management
algorithm are instrumental in enabling the delivery of such a service

53. Ureteroscopy for stone disease in the paediatric population: Lessons learned and outcomes in a Nordic setting

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Background
Paediatric stone disease is rare in the Nordic communities. Still, the condition can require surgical intervention in the form of ureteroscopy (URS). Here, we report outcomes achieved at a regional (tertiary) centre.
Methods
Retrospective analysis was performed of consecutive patients (<18 years) undergoing URS for stone disease between 2010-2021. Outcomes of interest included stone free rate (SFR) determined using definition of no residual fragments ≥3 mm on imaging and complications classified according to Clavien-Dindo system.
Results
In total, 23 patients underwent 47 URS procedures for a total of 31 stone episodes. Mean age was 9 years (range 1-17) and male to female ratio was 6:17. 35% had at least one medical comorbidity. Ultrasound

determined preoperative stone status in 87%. Mean largest index and cumulative stone sizes were 9 mm (range 3-40) and 12 mm (range 3-40) respectively. 32% had multiple stones. Lower pole was the commonest stone location (35%). No patients were pre-stented. Ureteral access sheaths were not used in any cases. Access to upper urinary tract at first procedure was successful in 94%. Initial and final SFR was 61% and 90%, respectively. No intra-operative complications were recorded. Overall post-operative complication rate was 15%. Urinary tract infection (CD II) was the commonest adverse event (11%).
Conclusion
Paediatric URS can be delivered in the setting of a regional centre without compromising outcomes. This includes when carried out by adult endourologists, without routine pre-stenting and omitting use of ureteric access sheath.

54. Peyronie's Disease Questionnaire: Translation to Danish and cultural adaptation

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Background and aim: Peyronie´s disease (PD) has an impact on mens health both mentally and physically. The validated American Peyronies disease questionnaire (PDQ) was developed to ensure all aspects being addressed in order to achieve higher satisfaction and enable patient and health professionals to choose the best suited treatment. The aim was to translate PDQ into Danish and cross-culturally adapt and test PDQ in a Danish population.
Materials and methods: Translation of the PDQ followed the guidelines of Beaton 2000. The expert committee agreed upon a Danish version after cross-cultural adaption. The Danish PDQ was send by electronic mail to a preselected group of 41 men with PD. After completion of the questionnaire, 32 men underwent a video-interview to identify any problematic fields or areas to be misunderstood.
Results: PD bothered 87% the last time they had intercourse and 93% men experienced to be bothered by having intercourse less often. Seventy-three were bothered when they looked down at them self, 88% had intercourse less often as they did before having PD.
Conclusions: After the interview of 32 Danish men with PD, we adapted the questionnaire into Danish conditions so the men experienced that their bother was best represented. The majority expressed satisfaction with the questionnaire and asserted it could be valuable as a tool when visiting the doctor the first time. Results from the questionnaire illustrated that also Danish men experiences great bother with PD.

55. Seven years follow up after stem cell therapy for erectile dysfunction in men after RARP (Robot assisted radical prostatectomy)

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Background
Prostate cancer is the most common cancer among men in Denmark, but surgical treatment has side effects e.g. erectile dysfunction (ED). Our previous study showed improvement in 8 out of 11 (73 %) of the continent men using stem cells for ED after RARP. The aim is to assess the efficacy of the treatment after 7 years.
Methods
Seventeen men from the safety study were included. Fifteen were sent questionnaires as two had passed away. After three months, 12 men (80%) had completed the questionnaires, but one was excluded due a

penis implant. The questionnaire included questions about their erectile function, sexual activity and -satisfaction.

Results

The median age was 67.5 years (SD: ± 6.22). Seven out of 11 (64%) were sexually active, but only three (27 %) reported being able to get an erection hard enough for penetration. Seven out of 11 (64%) stated that their confidence in own ability to get an erection was very low. Three men (27%) experience a change after treatment, two (18%) for the better and one (9%) for the worse, whereas the remaining 8 (73%) did not see a change. The international index of erectile function showed an average score on 21.9 out of 75, and IIEF-5 was 8.3 out of 30.

Conclusion

Stem cell treatment in this safety study showed lasting effect in 27 % of the men using stem cell therapy after seven years. To decide whether stem cell therapy has a role for ED a randomized study is needed.

56. Nephrostomy Balloon Catheters in first Attempt

Henriette Jensen[1], Nurse, MCN Beritt Pedersen[2], Doctor of medicine, Celi Anne Schoenike[3], Lector in clinical nursing, Lone Jørgensen[4], Medical anthropologist, MAH and PhD, lector in clinical nursing, Helle Haslund[5]
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Background

A nephrostomy pigtail catheter (NPC) can cause complications such as obstruction, pyelonephritis and urosepsis, whereas, according to experience, nephrostomy balloon catheters (NBC) lead to fewer complications. Commonly, patients who first received a NPC, experienced complications, and had to have their NPC changed acutely, before being offered a NBC. NBC was not the first choice due to the anticipation of pain associated with the insertion of the device.

Methods

The objective is to examine whether a NBC can be considered the first-choice intervention for patients with ureteral tumor obstruction if inserted with a pain-management package.
A meeting was held with all those involved to introduce the project protocol and a questionnaire for the urological radiologists and the patients. Flow charts were devised for urologists and urological nurses alike. A pain-management package was established.

Results

Fifteen out of the twenty initial patients were included. Five patients were excluded due to a lack of dilators, pain, lack of indication, and a high bleed-risk. Urological radiologists reported that the insertion of NBCs did not seem more painful, and that it was possible to successfully insert NBCs on 14 patients. Twelve patients reported a VAS of 0-5, one 6-10, and two patients did not complete the questionnaire. Regarding the assessment of anxiety leading up to the procedure, nine patients reported a VAS of 0-5, three 6-10, while two patients did not complete the questionnaire.

It is now considered standard of practice that patients with ureteral tumor obstruction receive a NBC as a first-line intervention.

57. Bleeding complications in ABO incompatible kidney recipients

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Background: Kidney transplantation is the best treatment for patients with end-stage renal failure. Due to a shortage of organs, ABO incompatible donors are used. It has been hypothesized that recipients that receive an ABO incompatible kidney have an increased risk of complications including bleeding complications. This study aimed to describe the postoperative bleeding complications in ABO incompatible kidney recipients at Rigshospitalet.
Methods: The study included 460 consecutive kidney transplant recipients who underwent kidney transplantation between November 2014 and March 2020 at the department of Urology, Rigshospitalet. Data was collected retrospectively by chart review. Bleeding complications were recorded when a patient required blood transfusion or surgical intervention within the first 30 days after transplantation. Absolute risk of bleeding within the first 30 days after transplantation was analyzed using cox regression and Kaplan Meier plots. Log-rank test was used to compare hazards.
Results: Forty-four (9.6%) out of 460 patients received an ABO incompatible kidney. Kaplan Meier curves showed that patients receiving an ABO incompatible kidney had increased risk of a bleeding complication, however the hazard between the two groups was not significant (log-rank test: p=0.06). Cox regression analysis showed that ABO incompatible recipients had an increased hazard of a bleeding complication, however the difference was not significant. (HR:1.6, CI 95% 0.99;2.52, p=0.058).
Conclusion: This study indicates that ABO incompatible kidney recipients have a higher risk of bleeding complications requiring intervention, however the differences were not significant and bigger sample sizes are needed.