SC70	Diagnostic accuracy of biparametric magnetic resonance imaging of the prostate (bp-MRI) in males who never underwent prostate biopsy: data after more than 350 patients enrolled
SC71	Detection of gene mutations by NGS sequencing in prostate cancer
SC72	Plasmatic exosome levels expressing PSA distinguish prostate cancer from benign prostatic hyperplasia: A prospective study in human patients
SC73	Assessment of two-gene urinary test with multiparametric magnetic resonance imaging of the prostate for biopsy naïve men: A prospective study
SC74	Role of 68GA-PSMA pet/ct after radical prostatectomy in patients with biochemical recurrence: Results of a monocentric retrospective study

SC29 Multiparametric MRI before robot-assisted radical prostatectomy allows for a greater utilization of nerve sparing with no detrimental impact on surgical margins status

G. Giannarini, R. Girometti, F. Bonato, S. Pizzolitto, F. Zattoni, C. Valotto, C. Zuiani, F. Dal Moro (Udine)

Introduction: Multiparametric MRI (mpMRI) is increasingly used for treatment planning in patients with clinically localized prostate cancer (PCa) scheduled for surgery or radiation therapy. In this study, we assessed the impact of mpMRI on utilization of nerve sparing and surgical margins status in patients scheduled for robot-assisted radical prostatectomy (RARP).
Materials and methods: Consecutive patients with clinically localized PCa treated with RARP at our institution between 06/2017 and 09/2019 were retrospectively analysed. The study group comprised patients with preop mpMRI, the control group patients with no preop mpMRI (contraindications or urologist's preference). mpMRI was performed on a 3.0 T magnet with a PI-RADS v2-compliant protocol. One of 3 genitourinary radiologists read mpMRI, mapped all suspicious lesions, and assigned a radiological stage. Two high-volume surgeons performed all procedures. In case of available mpMRI, the operating surgeon examined report and images before the procedure to determine the dissection plan. Nerve sparing was defined as uni- or bilateral intra- or interfascial dissection. Non nerve sparing was defined as uni- or bilateral extrafascial dissection. In the study group, nerve sparing was performed in all cases of intracapsular tumour on mpMRI, irrespective of European Association of Urology (EAU) risk group. In the control group, nerve sparing was performed in EAU low- and intermediate-risk groups with <50% positive biopsy cores. RARP specimens were processed with conventional or whole-mount sections, and re-read by a single experienced pathologist. Study outcomes were rate of nerve sparing procedures and of positive surgical margins (PSMs).
Results: A total of 204 patients were included, 115 in the study and 89 in the control group. Median age was 65 years. EAU risk distribution was 49/204 (24%), 118/204 (58%) and 37/204 (18%) for low-, intermediate- and high-risk PCa. No significant differences between groups were observed for age, EAU risk group distribution, baseline urinary continence and erectile function. On definitive pathology, Grade Group >2 and stage ≥pT3 were found in 46/115 (40%) and 39/115 (34%) in the study, and in 35/89 (39%) and 31/89 (35%) in the control group, respectively ($p = 0.45$ and 0.29). A nerve sparing procedure was performed in 66/115 (57%) and 31/89 (35%) patients in the study and control group, respectively ($p = 0.01$). PSMs rate was 17/115 (15%) and 12/89 (13%) in the study and control group, respectively ($p = 0.11$).
Conclusions: Utilization of mpMRI in surgical planning before RARP versus no utilization allowed a higher number of nerve-sparing procedures to be performed with no increase in PSMs rate. Larger, multi-institutional, possibly randomised, studies are warranted to further ascertain the role of prostate mpMRI in treatment planning.

SC30 Micro-ultrasound guided and MRI-targeted prostate biopsies for clinically significant prostate cancer diagnosis in the initial biopsy setting a cohort of biopsy-naive patients

D. Maffei, M. Paciotti, P. P. Avolio, F. Regis, N. Frego, A. R. Saita, M. Lazzeri, R. Hurle, P. Casale, N. M. Buffi, G. F. Guazzoni, G. Lughezzani (Rozzano)

Introduction: Prostate mpMRI holds an early place in the EAU prostate cancer (PCa) diagnostic pathway, yet it is affected by drawbacks in terms of costs and availability while requires concomitant systematic biopsies. Micro-ultrasound (micro-US) has emerged as an alternative tool able to provide real-time identification and targeting of prostatic lesions. Our aims was to evaluate the diagnostic performance of micro-US in a biopsy-naïve population of patients with recent mpMRI and clinical suspicion of PCa.
Materials and methods: Data on patients imaged with the Exact-Vu micro-US system during prostate biopsies at our centre between October 2017 and February 2020 were prospectively collected. 273 biopsy naïve patients with a clinical suspicion of PCa and prostate mpMRI were identified. PRI-MUS protocol was applied to identify suspicious lesions (PRIMUS score ≥3) which received 1–2 target biopsy cores. The procedure was completed with systematic biopsy and mpMRI-targeted biopsy of suspicious (i.e. PI-RADS ≥3) lesions. The detection rate of clinically significant PCa (defined as Gleason score ≥7 cancer; csPCa) was determined. The diagnostic performance of micro-US targeted, systematic, mpMRI-targeted biopsies and their combination was assessed.
Results: Mean patient age was 64.9 (SD8.1) yr, median total PSA was 6.5 (IQR 4.7–8.6) ng/mL and median prostate volume was 47 (IQR 35–68) mL. Suspicious lesions were identified by micro-US and mpMRI in 215 (78.8%) and 255 (93.4%)patients, respectively.
Overall csPCa detection rate was 44.3% (121/273). CsPca rates significantly increased from 17.2% (5/29) to 44.9% (61/136) to 78.0% (39/50) in patients with PRI-MUS 3, 4 and 5 lesions, respectively ($p < 0.01$). CsPCa detection rates significantly increased from 20.0% (10/50) to 45.7% (74/162) and 83.7% (34/43) in patients with PI-RADS 3, 4 and 5 lesions, respectively ($p < 0.01$). Combination of micro-US targeted and randomized biopsies detected 119 (98.3%) patients, while combination of MRI-targeted and randomized biopsies also detected

119 (98.3%). 12 (9.9%) patients were identified only by random biopsy cores.
Micro-US imaging provided high sensitivity, with 86.8% csPCa patients (105/121) having at least one PRI-MUS score ≥3 lesion. NPV was 72.4%, with 42/58 patients without target lesions receiving a benign or GS6 diagnosis. Conversely, PPV and specificity were lower (48.8% and 27.6%).
Conclusions: Micro-US may represent a valid tool in the initial diagnostic workup of patients suspected for PCa thanks to its high sensitivity and NPV as imaging test, as well as its ability to implement systematic biopsies with real-time identification and targeting of suspicious lesions. Randomised comparative trials with mpMRI are needed.

SC31 Metabolic syndRoma evaluation improves prostate cancer detection in patients undergoing a repeat biopsy

A. Cicione, C. De Nunzio, A. Nacchia, R. Lombardo, A. Trucchi, A. Tubaro (Roma)

Introduction: Aim of our study was to evaluate Metabolic syndRoma (MetS) as a risk factor for Prostate cancer (PC) in patients undergoing repeat trans-rectal prostate biopsy (PB).
Materials and methods: Between May 2010 and October 2018 a prospective cohort study was carried out by enrolling patients who underwent repeat biopsy for persistence of clinical suspicion of PC: PSA≥4 ng/ml, suspect digital rectal examination findings, more than three biopsy cores with High Grade Prostatic Intraepithelial Neoplasia (wHGPIN). PSA≥20 ng/ml was the main exclusion criteria. PB was performed six months after the first one. A 12–14 core prostate biopsy template was used in both biopsies. MetS was defined according to the Adult Treatment Panel III criteria. A binary logistic model was computed to assess risk factors of PC on re-biopsy. A nomogram was generated to predict PC. Accuracy was evaluated using the L-ROC.
Results: Overall 309 patients aged 67.6±7.7 years were enrolled. Mean BMI was 27.5±3.4, mean prostate volume was 53.7±24.8cc. An initial diagnosis of chronic prostatitis, ASAP and HGPINwere respectively reported in 231 (74.8%), 9 (2.9%) and 69 (22.3%) patients, while 141 (37.0%) patients had a diagnosis of MS. Repeat biopsy diagnosed 96 (31.1%) cancers, 3 (1%) ASAP, 62 (20.1%) HGPIN, 142 (46.0%) benign lesions. Among cancers, 71 (74%) were Gleason Score (GS) = 6 and 25 (26%) GS≥7. No significative difference was found regarding median PSA on initial and repeat biopsy, 6.9 ng/ml IQR 5.2–8.2 Vs 6.6 ng/ml IQR 4.3–11.2, p > 0.05. On univariate analysis, MS (OR 1.6 CI 1.03–2.78, p = 0.03), AGE (OR 1.05 CI 1.01–1.08, p = 0.003) and HGPIN (OR 3 CI 1.7–5.2, p = 0.01) were the only independently risk factors of PC on repeat while PSA (0.9 0.82–0.98 p = 0.21)and PSA density (OR 0.15 0.1–1.82 p = 0.13) were not. MS diagnosis was the only risk factor able to predict aGS ≥7cancer: OR 3 CI 1.17–8.07 p = 0.02. On multivariate analysis the model including age, MS and HGPIN was able to predict GS ≥7 (LROC 0.82) with a net benefit in the range of probability between 10% an 45%.
Conclusions: In our patients MetS was an independent predictor of PC and especially for high grade PC, confirming the importance of evaluating metabolic factors in patients at risk for prostate cancer. Our model, if validated could be used to reduce the number of unnecessary biopsy in patients with a previous negative biopsy.

SC32 Rotterdam mobile phone appincluding MRI data for the prediction of prostate cancer: A multicenter external validation

L. Cindolo, C. De Nunzio, R. Lombardo, R. Bertolo, P. Bove, A. Minervini, F. Sessa, G. Muto, M. Vittori, G. Bozzini, P. Castellan, F. Mugavero, M. Falsaperla, L. Schips, A. Celia, M. Bada, A. Porreca, A. Pastore, Y. Al Salhi, M. Giampaoli, G. Novella, R. Rizzetto, N. Trabacchin, G. Mantica, A. Antonelli, G. Pini, S. Remmers, A. Tubaro (Roma)

Introduction: The Rotterdam Prostate Cancer Risk calculator (RPCRC, available as mobile phone app) has been extensively validated in the past years. Recentlya new version including MRI data has been released. The aim of our study was to analyze the performance of the MRI RPCRC app in a multicenter cohort of patients undergoing prostate biopsies.
Materials and methods: A consecutive series of men undergoing prostate biopsies were enrolled in elevenItalian centers. Indications for prostate biopsy included abnormal Prostate specific antigen levels (PSA>4 ng/ml) and/or abnormal DRE and/or abnormal MRI. Demographic and clinical characteristics of the patients were recorded. Prostate cancer (PCa) risk and high-grade PCa risk were assessed using the RPCRC app (iOS). The RC within this App includes the following variables: age, PSA, previous prostate biopsies, DRE, PIRADS score and prostate volume. The performance of the MRI RPCRCin the prediction of cancer and high-grade PCar (Gleason >6) was evaluated using receiver operator characteristics, calibration plots and decision curve analysis.
Results: Overall 580 patients with amedian age of 66 (61/70) years were enrolled. Median PSA was 6 (4/8) ng/mland median prostate volume was 47 (39/61) ml. Moreover 178/580 (31%) had previous biopsies. MRI showed the following PIRADS scores: 26 (5%) PIRADS 1, 2 (0,9%) PIRADS 2, 196 (34%) PIRADS 3, 263 (45%) PIRADS 4 and 93 (16%) PIRADS 5. Overall 404/580 (70%) presented PCaand out of them 224/404 (55%) presented high-grade PCa. In the prediction of cancer,the RC presented good discrimination (AUC = 0,74), poor calibration (p = 0,01) and a clinical net benefit in the range of probabilities between 50 and 90% for the prediction of PCa. In the prediction of high-grade PCa, the RC presented good discrimination (AUC = 0,79), good calibration (p = 0,48) and a clinical net benefit in the range of probabilities between 20 and 80%.
Conclusions: Despite the high a priori risk (70% had PCa, resulting in miscalibration in overall PCa risk) the user friendly RPCRC Appstill had added value in predicting high-grade PCa. Future studies evaluating the clinical impact of the mobile phone app in clinical practice are warranted and setting specific calibration might be indicated and is feasible.

SC33 The use of 29 MHZ transrectal micro ultrasound to stratify the presence of prostate cancer in patients with an equivocal mpMRI: A single institutional analysis

P. P. Avolio, N. M. Buffi, D. Maffei, F. Regis, F. Persico, M. Lazzeri, G. F. Guazzoni, P. Casale, P. Diana, M. Paciotti, G. Lughezzani (Milano)

Introduction: The reduction of unnecessary prostate biopsies is an important clinical goal in order to minimize patient stress and to reduce the risk of infection or overtreatment. The aim of the current study was to assess whether micro-ultrasound (mUS) can help to provide a sub-stratification of patients with an indeterminate (PIRADS 3) lesion at multiparametric MRI (mpMRI).