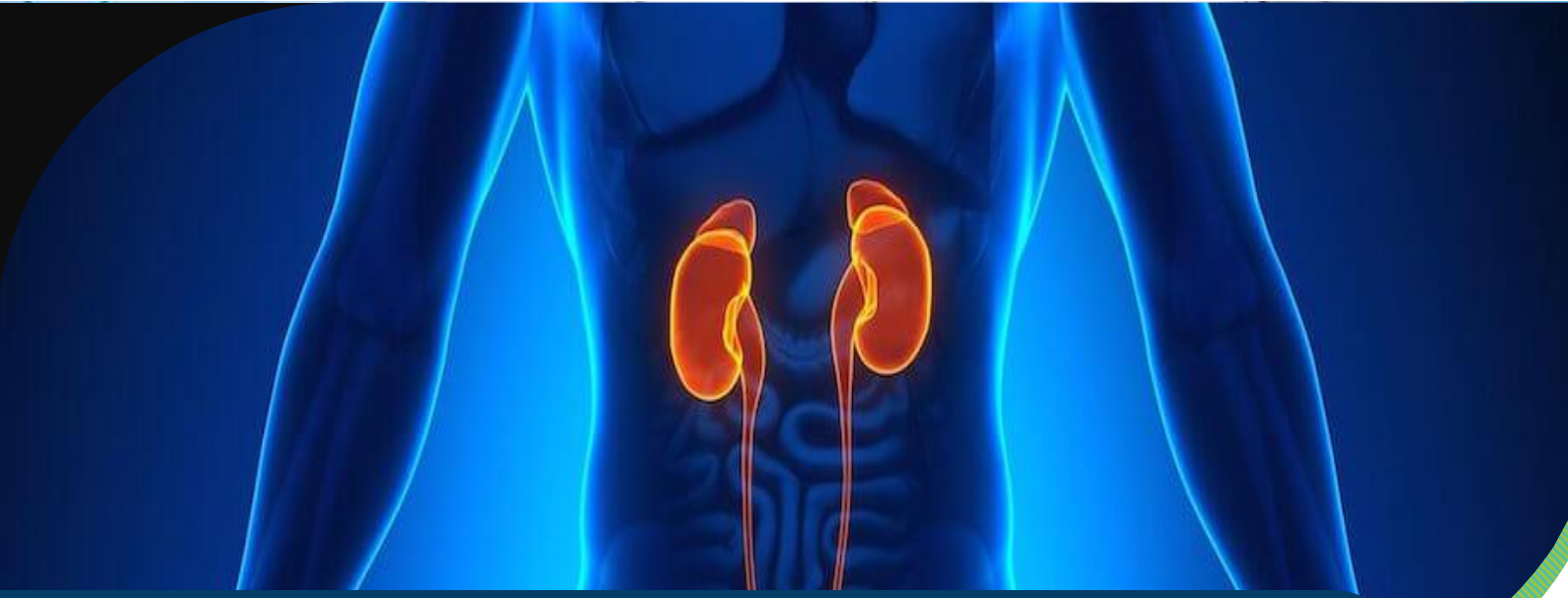

NU Rounds

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Dear Doctor,

Greetings from Micro Labs limited. We are happy to bring you "**NU Rounds**" which contains latest and interesting news in the field of Urology.

Inside This Issue:

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback

Best Regards,

Medical Team, Micro Labs Ltd

PSMA PET-CT Superior for Staging High-Risk Prostate Cancer

PSMA positron emission tomography-computed tomography (PSMA PET-CT) is, according to experts, a more precise way to stage men with high-risk localized prostate cancer than is conventional imaging.

Michael S. Hofman, of the Peter MacCallum Cancer Center in Melbourne, Australia, and colleagues announced in a paper published in The Lancet that the PSMA PET-CT is an appropriate replacement for conventional mri, providing superior specificity to the mixture of CT and bone scanning tests.

In a Step 3 trial Dr Hofman and his collaborators tested 300 patients with high-risk intermittent prostate cancer for active prostatectomy or radiotherapy of curative purpose. Researchers were given conventional CT and bone scans (152 patients) or gallium-68 PSMA-11 PET-CT imaging (148 patients) for subjects.

The study had a synthetic structure under which, on the other modality, individuals who had no more than 2 unambiguous distant metastases on first-line imaging were subjected to second-line imagery.

The investigators reported that in detecting pelvic nodal or remote metastases, PSMA PET-CT showed 27 percent greater precision than standard imaging (92 percent vs. 65 percent). PSMA PET-CT had greater response (85% vs 38%) and precision (98% vs 91%) compared to conventional imagery.

First-line PSMA PET-CT has culminated in more systemic changes than conventional reflection (28% vs 15%) and less equivocal findings (7% vs 23%). In comparison, the conventional mri was associated with a higher radiation exposure than PSMA PET-CT (19.2 vs 8.4 mSy).

Improvement of treatment resulted of 27 per cent of PSMA PET-CT cases, relative to 5 per cent of those undergoing conventional imaging in second-line imagery cases.

The authors indicated that the cumulative data from this prospective imaging study and other series provides proof that is better than PSMA PET-CT, which may complement conventional imaging with CT and bone scanning for staging men with high-risk prostate cancer with curative intent prior to surgery or radiotherapy. In the light of these findings, existing guidelines should be checked. To encourage fair benefits and have equal coverage for men and PSMA PET-CT further health-economic work is required.

Urinary Stone Disease in Pregnancy

INTRODUCTION

Despite the major health effects of urinary stone disease during breastfeeding, the prevalence is not well defined. Urinary stone disorder is reported to occur in 0.6 to 5 in 1,000 births currently. The latest results, however, was restricted to evaluations of either minor or independent organizations.

While the prevalence of urinary stone disease is growing, particularly among women in the general population, it is uncertain if urinary stone disease in pregnant women is also on the rise. Urinary stone disorder may contribute to extreme discomfort, as well as increased risk of infection and kidney failure.

Urinary stone disorder in pregnant women presents a health problem for evaluation and care, because physicians may weigh the dangers of maternal and fetus sensitivity to ionizing radiation or anesthetic agents. Approximately 20 per cent of pregnant women with urinary stones need care during labour, mostly with the intention of decompressing the kidney and reducing stone-related complications before after childbirth a conclusive stone operation may be conducted safely.

Moreover, urinary stone disorder and its diagnosis are believed to raise the likelihood of risks linked to pregnancy such as prematurity, preeclampsia and involuntary abortions. The research aims to establish the incidence of urinary stone disorder during pregnancy, and whether it is linked with negative effects of birth.

METHODS

All pregnant people were listed in the Optum national insurance compensation archive from 2003 to 2017. To recognize urinary stone disorder and determine medical comorbidity, they used diagnostic statements. We measured the incidence of urinary stone disease stratified by week of pregnancy through pregnancy. Through univariable and multivariable analyzes they also analyzed correlations between urinary stone disorder, menstrual disorders and maternity outcomes.

Urinary Stone Disease

Pregnant women were identified as having urinary stone disorder by making stone treatment statements (ICD-9 and ICD-10) during gestational cycles. They then determined the week of pregnancy during which the evaluation of the stone first took place.

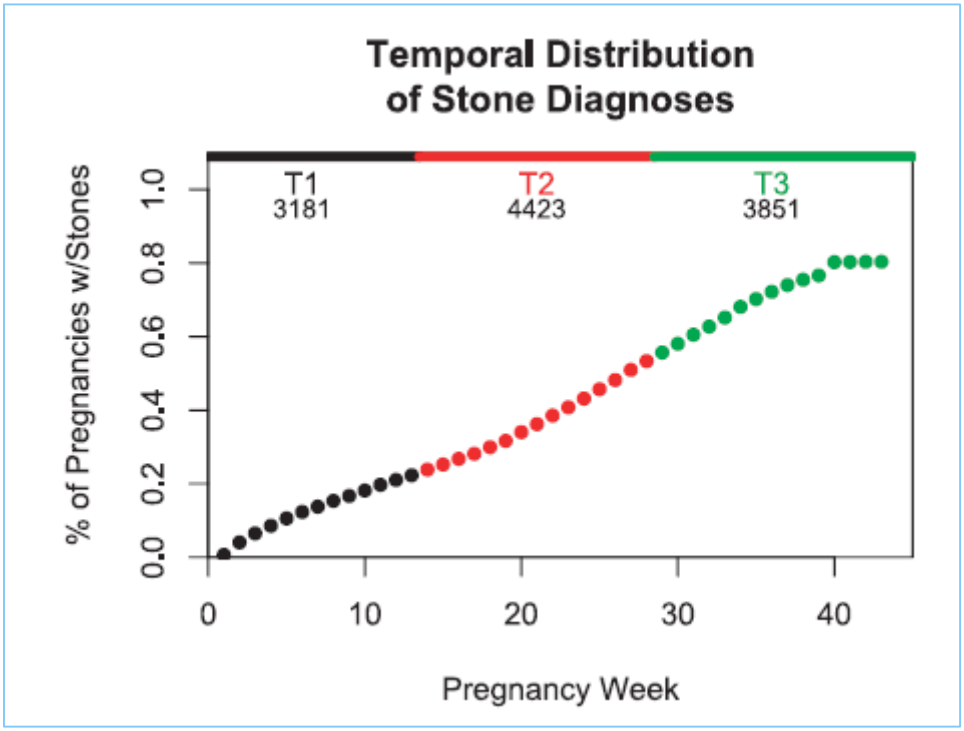
Maternal Complications and Pregnancy Outcomes

They further analyzed codes for pregnancy complications. Using the gestational age criteria previously mentioned we classified each pregnancy as a term delivery, preterm delivery, spontaneous abortion,

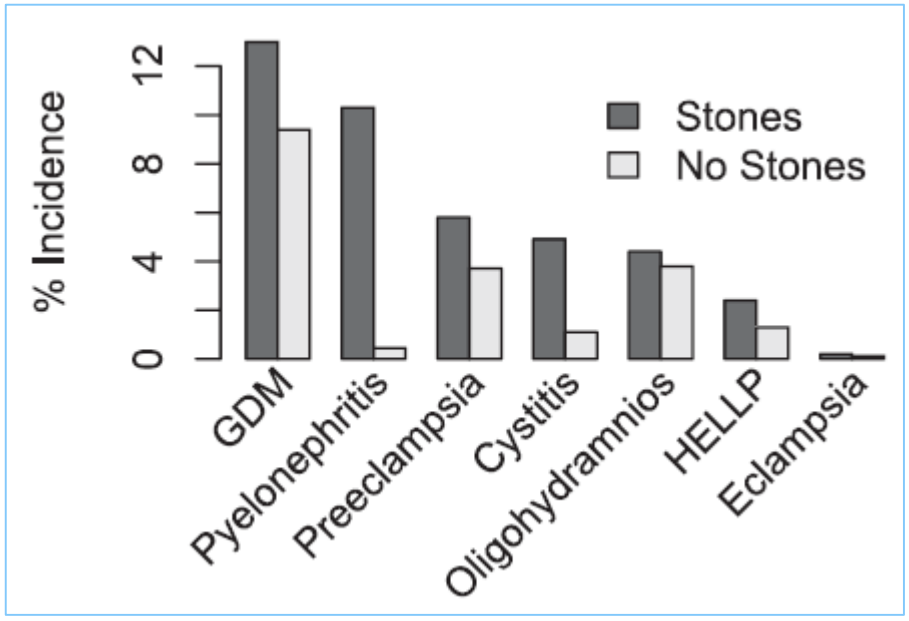
stillbirth or therapeutic abortion with further subclassification based on gestational viability (more than 24 weeks vs 24 weeks or fewer).

RESULTS

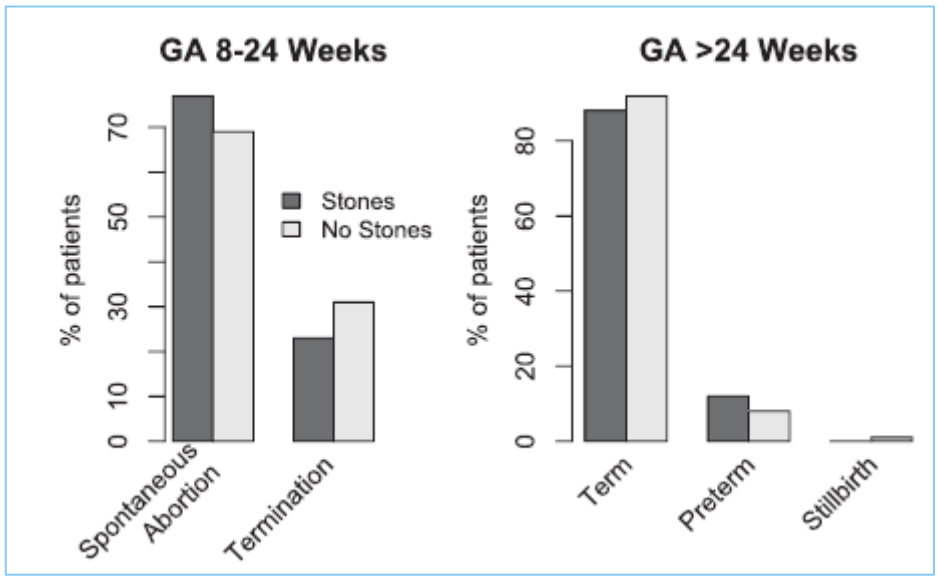
Urinary stone disease affects 8 per 1,000 pregnancies and is more common in white women and women with more comorbid conditions. In fully adjusted models pregnancies complicated by urinary stone disease had higher rates of adverse fetal outcomes including prematurity and spontaneous abortions. This analysis is limited by its retrospective, administrative claims design.



Cumulative percentage of entire cohort with stones per week of pregnancy, demonstrating increased slope starting in second trimester that carries into third trimester.



Comparison of maternal complications in pregnant women with term pregnancies with and without stones, demonstrating higher rates of all maternal complications in pregnant women with urinary stone disease. All differences statistically significant with p <0.001. GDM, gestational diabetes mellitus.



Comparison of fetal outcomes in pregnant women with and without stones, grouped into viable and nonviable pregnancies, illustrating increased rates of spontaneous abortions and premature births in pregnant women with urinary stone disease. All differences statistically significant with p <0.001. GA, gestational age.

CONCLUSIONS

In a broad longitudinal cohort of 1.4 million pregnant mothers, urinary stone disorder was identified in 8 of the 1,000 pregnancies. Urinary stone disorder is linked with negative effects in birth in both mother and fetus during pregnancy. Such evidence help attempts to test and manage urinary stone disease successfully during pregnancy to enhance results for both mother and fetus.

REFERENCE

Sohlberg EM, Brubaker WD, Zhang CA, et al. Urinary Stone Disease in Pregnancy: A Claims Based Analysis of 1.4 Million Patients. J Urol. 2020;203(5):957–961.

Use of Saturation Biopsy and Baseline Multiparametric Magnetic Resonance Imaging to Reduce the Frequency of Surveillance Prostate Biopsies: The Magnetic Resonance Imaging in Active Surveillance (MRIAS) Trial

INTRODUCTION

The increasing acceptance of prostate-specific antigen testing has contributed to early diagnosis and improved incidence of prostate cancer, contributing to over detection of other irrelevant cancers that could otherwise have induced morbidity or death. Strong surveillance seeks to mitigate overtreatment of localized PCa through near diagnostic inspection and is recognized as the normal low-risk PCa management method, endorsed by the ProtecT and PIVOT studies and other broad prospective AS cohorts. Although the qualifying requirements for the AS are substantially heterogeneous, most recommendations involve people with Gleason 3 + 3=6, cT2a or lower and PSA less than 10 ng / ml. Anyone of Gleason 3 + 4=7 PCa getting a small percentage of Gleason pattern 4 can also be given constructive monitoring of caution. AS techniques differ greatly globally, which typically include extensive surveillance involving 3 to 6-monthly PSA and automated rectal inspection, repeat confirmatory prostate biopsy within 6 to 12 months of diagnosis, and further frequent repeat biopsies. Frequent biopsies cause big costs, rising quality of life and impose a financial strain on health care facilities.

This prospective single arm cohort study of a novel AS strategy aimed to:

1) Assess the diagnostic utility of baseline and serial mpMRI to predict biopsy proven progression to csPCa in men on AS

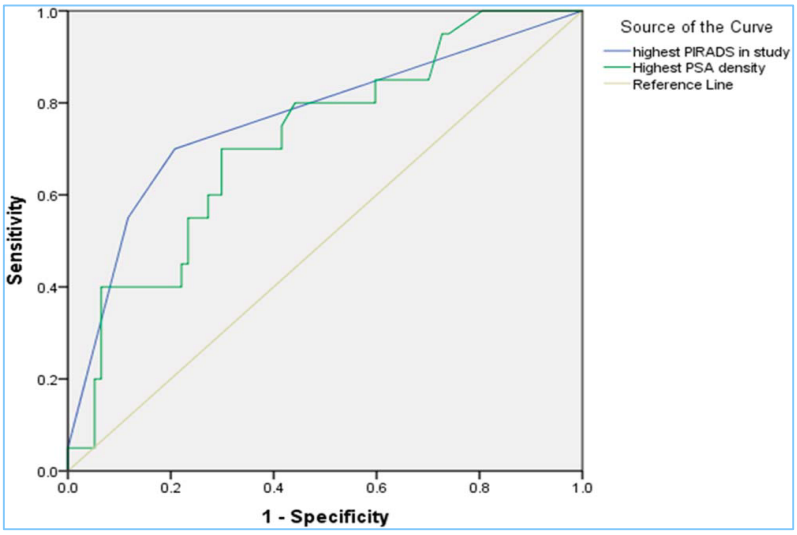
2) Prospectively assess the oncologic safety of an AS protocol that replaces confirmatory biopsy at 1 year with selective biopsy triggered by suspicious mpMRI.

METHODS

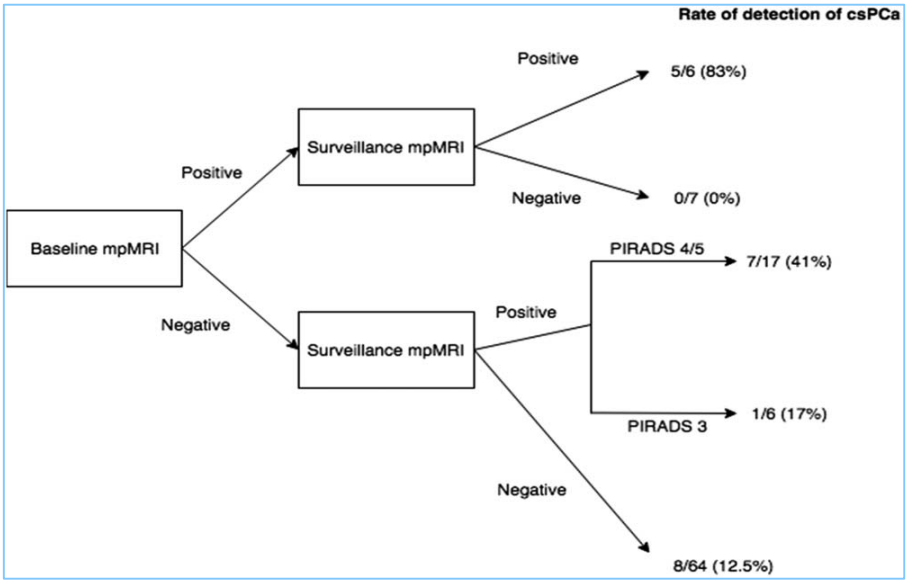
A total of 172 men were enrolled in this single arm prospective trial. Men with cT2 or lower histologically proven prostate cancer eligible for surveillance were included in the study. Men underwent baseline multiparametric magnetic resonance imaging and saturation biopsy followed by serial annual multiparametric magnetic resonance imaging until a 3-year end point per protocol saturation biopsy. The standardized 1-year confirmatory biopsy was omitted and biopsies during the protocol were triggered based on new abnormalities on multiparametric magnetic resonance imaging and prostate specific antigen density.

RESULTS

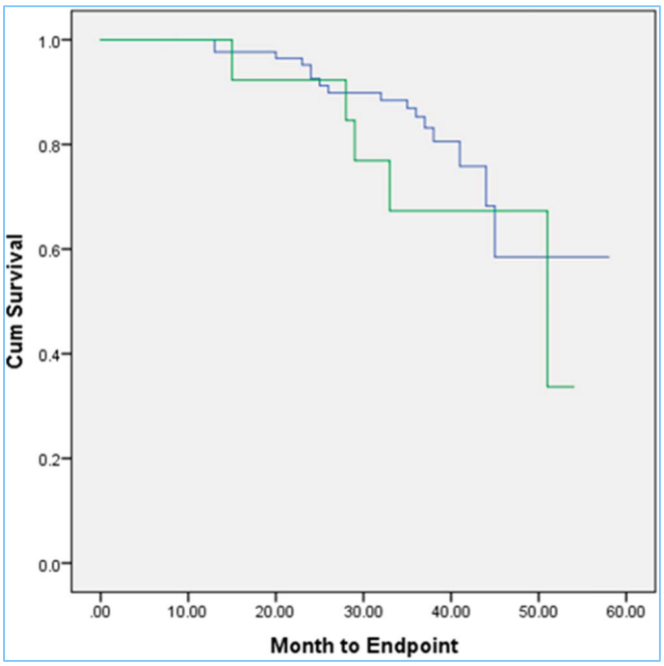
They report the prespecified interim analysis of the first 100 men at 3 years. At baseline the median age was 64.5 years, prostate specific antigen was 4.7 ng/ml, 91% had Gleason 3+3=6 prostate cancer and multiparametric magnetic resonance imaging was negative in 87% of men. Within 3 years 21% experienced pathological progression. The positive predictive value, negative predictive value, sensitivity and specificity for detection of clinically significant prostate cancer by surveillance multiparametric magnetic resonance imaging was 45%, 89%, 61% and 80%, respectively. Positive surveillance magnetic resonance imaging ($p<0.002$) and prostate specific antigen density greater than 0.2 ng/ml ($p<0.042$) had significant predictive value for clinically significant prostate cancer.



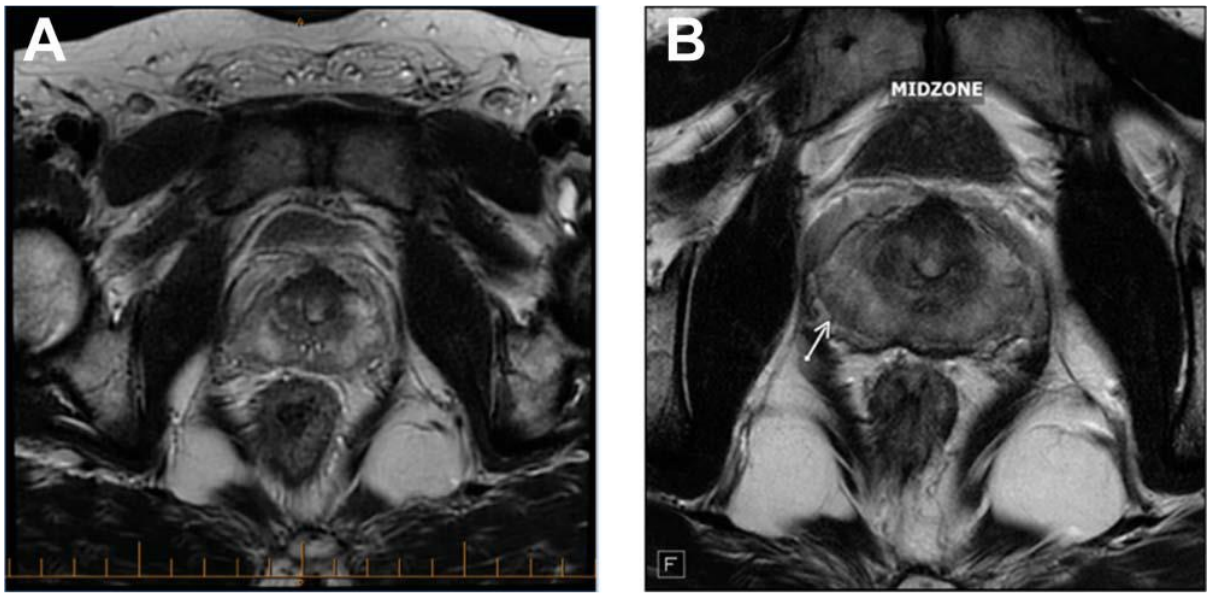
AUC ROC curve for accuracy of surveillance mpMRI and PSAD for prediction of csPCa over 3 years. AUC for detection of csPCa using surveillance MRI (blue, PI-RADS score 1-5) (AUC ROC 0.78, 95% CI 0.635-0.895) and PSAD (green, continuous variable) (AUC ROC 0.71, 95% CI -0.596-0.842).



csPCa detection rate by baseline and surveillance mpMRI.



Progression-free survival on AS according to baseline mpMRI, with Kaplan-Meier curves for positive (PI-RADS 4/5) (green curve) vs negative (PI-RADS 1/2/3) (blue curve) baseline mpMRI (log rank p<0.287). Cum, cumulative.



Case of radiological progression on ASwith serial mpMRI. A, baseline mpMRI (T2W) was considered PI-RADS 2. B, at year 1 (T2W) new focal lesion at right mid peripheral zone was noted (arrow). Targeted biopsy of region harbored Gleason 4D3 PCa.

CONCLUSION

This study describes the effects of an AS procedure replacing confirmatory biopsy with mpMRI, and using mpMRI as a biopsy cause. Confirmatory biopsy in most people on AS can be prevented at the risk of preventing csPCa diagnosis in a limited minority. Because mpMRI lacks a limited number of large high-grade tumors, we do not suggest that surveillance biopsies be substituted completely with mpMRI.

REFERENCE

Amin A, Scheltema MJ, Shnier R, et al. The Magnetic Resonance Imaging in Active Surveillance (MRIAS) Trial: Use of Baseline Multiparametric Magnetic Resonance Imaging and Saturation Biopsy to Reduce the Frequency of Surveillance Prostate Biopsies. J Urol. 2020;203(5):910–917.