MPMRI PROSTATE LESION SIZE AS A PREDICTOR OF PROSTATE CANCER DETECTION ON - NewYork-Presbyterian **MRI/US FUSION PROSTATE BIOPSY**





- Multiparametric magnetic resonance imaging (mpMRI) is increasingly used in prostate cancer (PCa) diagnosis.
- MRI/ultrasound (US) fusion biopsy (FBx) technology can target suspicious lesions noted on pre-biopsy mpMRI.
- It seems intuitive that larger lesions on mpMRI would be easier for the urologist to target on and therefore result in an increased PCa detection rate; however this has not been previously reported.
- **<u>Aims</u>**: to determine whether purely the size of a lesion on mpMRI would be predictive of PCa detection.

METHODS

- We retrospectively reviewed patients who underwent FBx from 7/2017 to 8/2019. Patient pre-biopsy prostate specific antigen (PSA) and lesion characteristics, including lesion dimensions and Prostate Imaging Reporting and Data System (PI-RADS) v2 score were noted and compared to final lesion biopsy pathology results.
- Multivariate logistic regression used to determine pre-biopsy factors independently associated with PCa detection on FBx.

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- Overall, 349 lesions were identified.
- Figure 1 shows the distribution of pathologic findings for the lesions examined.
- There were 151 (43.3%) lesions positive for PCa on final pathology, including 60 (39.7%) lesions with Grade Group (GG) 2 disease and 60 (39.7%) GG3 disease or higher.
- Median PSA at biopsy was 6.0 (1.5-84) ng/ml. Median lesion size was 254 (28.6-5024) mm². A total of 40 out of the 349 (11.5%) lesions were reported as PI-RADS 2, 94 (26.9%) PI-RADS 3, 138 (39.5%) PI-RADS 4, and 76 (21.8%) PI-RADS 5.
- On regression analysis, higher pre-biopsy PSA and higher PI-RADS were significant independent predictors of detecting PCa on final pathology of lesion biopsy; with each unit increase in PSA the odds of a positive biopsy increased 1.05 times (*p*=0.023); with each unit increase in PI-RADS score the odds of a positive biopsy increased 2.18 times (*p*<0.001).
- Larger lesion area did not significantly predict positive lesion biopsy result in this cohort.

Total lesions (n) Median PSA before biopsy Median lesion size (mm²) Median PI-RADS score of MRI lesion

RESULTS

349 6 (1.5-84) 254 (28.6-5042)

• Figure 1

Total Lesions	Total Benign	Total PCa	Grade Group 1	Grade Group 2	Grade Group 3 ≥
349	198	151	31 (20.5%)	60 (39.7%)	60 (39.7%)

- biopsy.
- cores).

REFERENCES / FURTHER INFORMATION



MP56

CONCLUSIONS

• There was no association between larger lesion area and PCa detection, suggesting small lesions can be accurately targeted on MRI/US fusion

• It remains to be studied though whether larger lesions require higher numbers of biopsy cores due to potential higher chance for heterogeneity within larger lesions (concordance between biopsy

> For further information on this topic email **Ip2860@cumc.columbia.edu** or tweet @columbiaurology

