Does MRI/US fusion target biopsy overestimate the Gleason score (GS) of PCa?

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Introduction

• Prior studies show that US-MR fusion Bx identify a higher Gleason score PCa than systematic TRUS Bx alone
  ➢ While the efficacy of detecting clinically significant PCa using US-MR fusion Bx has shown improvement over non-fusion methods, some questions remain as to their accuracy and clinical utilization in diagnosing the severity of the disease

• Our concern, however, is that the high US-MR fusion Bx Gleason score, may be uncharacteristically high for the entire tumor and a poor representation of the most prevalent grade of underlying cancer

• This higher Gleason score could then dictate a treatment option more aggressive than need be
  ➢ Potentially negative outcomes such as impotence or urinary incontinence among others
60 Years Old, PSA 7, lesion in the right PZ (PI-RADS 4), US/MRI Fusion Bx: PCa GS 7 (4 + 3)

Radical prostatectomy: Prostate Cancer GS 7 (3 + 4)
Teaching Points

• It is true that MRI/US fusion target biopsy may overestimate the Gleason score of PCa
  ➢ Target bx core needle only enters the lesion well visualized at MRI
  ➢ But tumor may be present 1 cm around the visualized lesion at MRI
    ➢ Sample larger area may help to decrease the overestimation

• Based on our unpublished research data, overestimating the final Gleason score of PCa by target biopsy is less compared to systematic TRUS Bx (14% vs. 19.6%)

• Therefore, US-MR fusion Bx presents a significant advantage over that of the TRUS Bx, in providing a final Gleason score that is more accurate and representative of the most prevalent underlying PCa
  ➢ This finding may have important implications for treatment decision
References