
**Gleason Grade Group Concordance Between
Preoperative Targeted Biopsy and Radical
Prostatectomy: A Comparison Between In-Bore MRI
-Guided and MRI-TRUS Fusion Prostate Biopsies**

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Introduction

Prostate Biopsy Group Grade (GG) is commonly used with clinical stage and PSA level to assess tumor risk and select treatment strategies for men with prostate cancer (PCa)

Preoperative accurate determination of GG is crucial for tailoring treatment to each patient's tumor characteristics

Nonetheless, it is known whether different targeting yield different concordance rates between biopsy versus radical prostatectomy (RP) grade group

Introduction

Targeted prostate biopsies improve detection of significant prostate cancer.

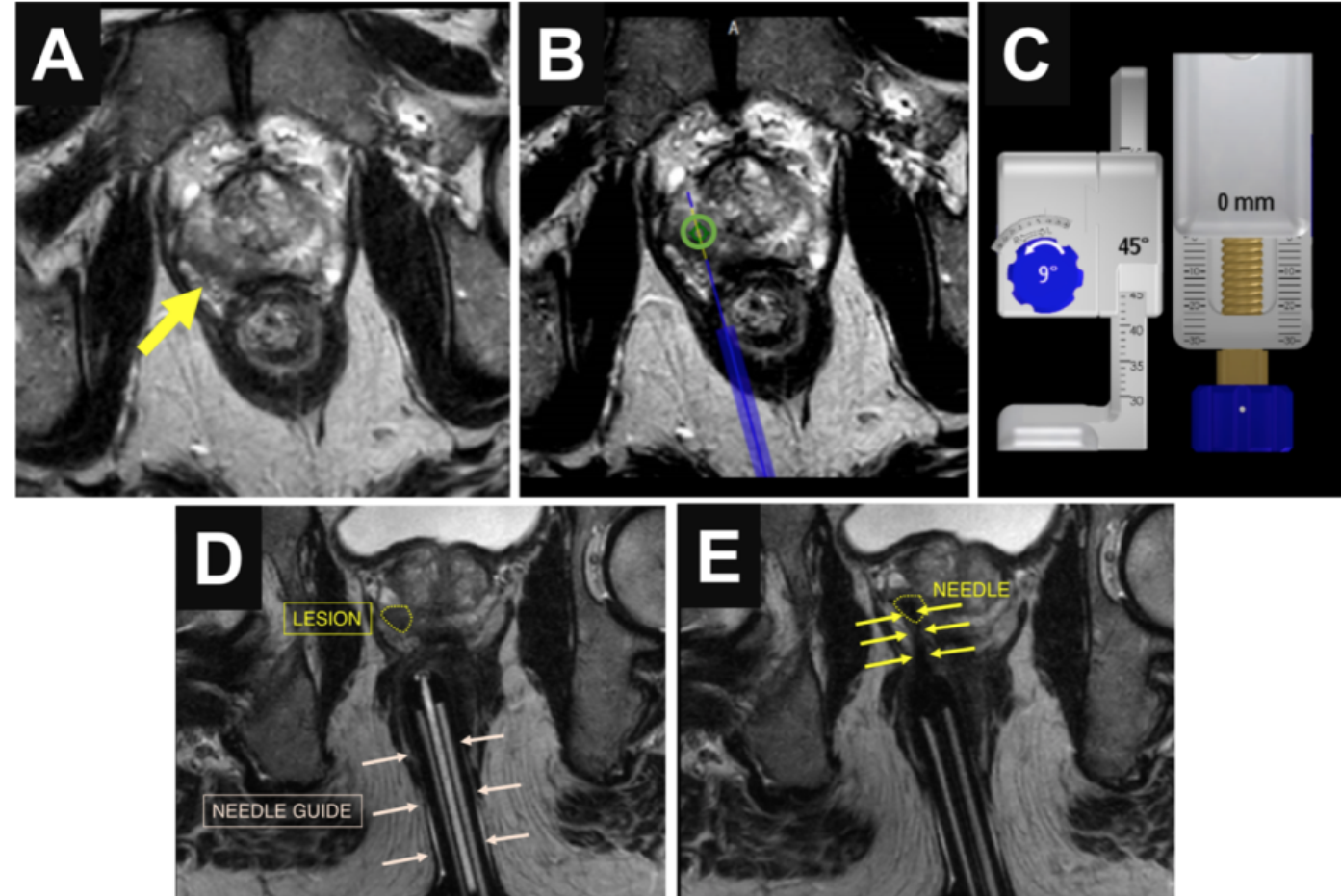
These techniques have also been shown to better predict RP final pathology compared to systematic biopsies alone

Two approaches stand out as the most accurate for targeting suspicious lesions identified in prebiopsy multiparametric MRI: software-assisted fusion (FBx) – which overlay MRI findings on the ultrasound screen – and direct, MRI-guided, in-bore biopsy (IBBx)

Introduction

In-bore biopsies provide direct visualization of the biopsy needle and the lesion location during lesion sampling and does not allow for systematic sampling of the gland.

The direct visualization of the biopsy needle and of the MRI-visible lesion provided by in-bore MRI-guided biopsies (IBBx) may result in superior sampling accuracy of these lesions compared to other techniques.



Objective

The goal of this study was to **determine and compare the rates of grade group concordance between preoperative targeted (IBBx vs FBx) biopsies and RP.**

■ Patients & Methods

This single-center, retrospective analysis of prospectively generated data included all men with abnormal mpMRI followed by IBBx or FBx between May/2017-Jan/2019 and May/2017-April/2018, respectively, who then underwent RP

FBx included targeted and systematic sampling

For assessment of GG agreement, the highest GG on the biopsy specimens was compared to the index lesion GG on the RP specimen at a patient level.

Results

- **191 men** (90 IBBx and 101 FBx; mean age 65y, PSA 8.3 ng/mL, prostate volume 53 cc, PSA density 0.18 ng/mL/cc) were eligible
- **Differences in concordance** (IBBx: 67%, 60/90, FBx: 57%, 57/101) and **downgrade** (IBBx: 20%, 18/90; FBx: 16%, 16/101) **rates were not statistically significant** ($p=0.16$ and 0.47 , respectively)
- There were **fewer upgrades in the IBBx** (13%, 12/90) than in the FBx (28%, 28/101) group ($p=0.01$)
- Most (62%, 46/74) reclassified cases involved GG 2-3 changes

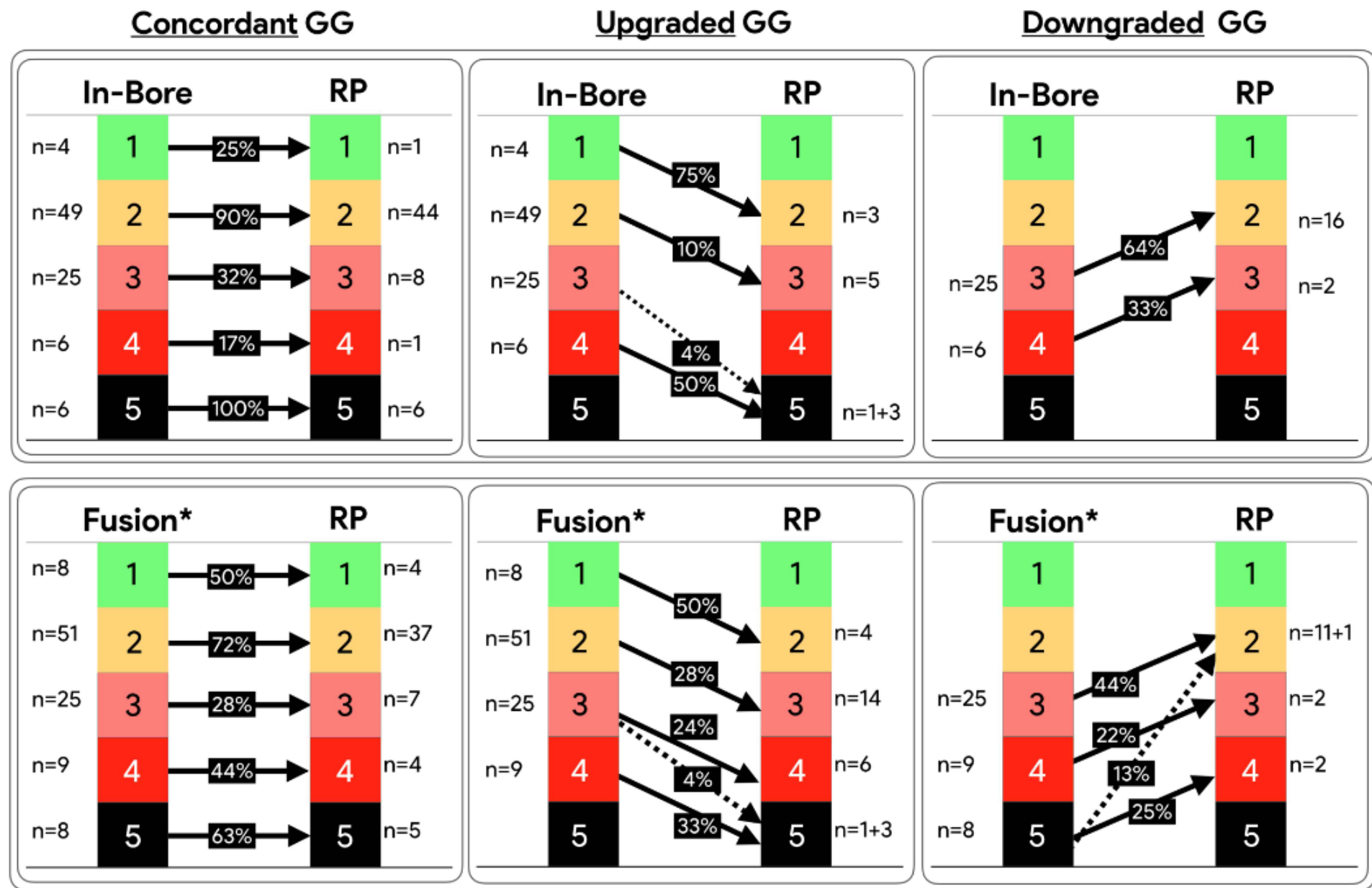


Fig. 1 - Correlation between prostate cancer grade group (GG) revealed by preoperative targeted (in-bore or fusion) biopsy and radical prostatectomy (RP). *Fusion biopsy includes systematic sampling; *n*, number of men; % are relative to *n* in each biopsy GG subgroup

Conclusion

In our study, **in-bore biopsies IBBx had lower incidence of GG upgrade after RP** suggesting that it may provide preoperative risk stratification superior compared to FBx

Concordance and downgrade rates were not significantly different between the two targeting approaches