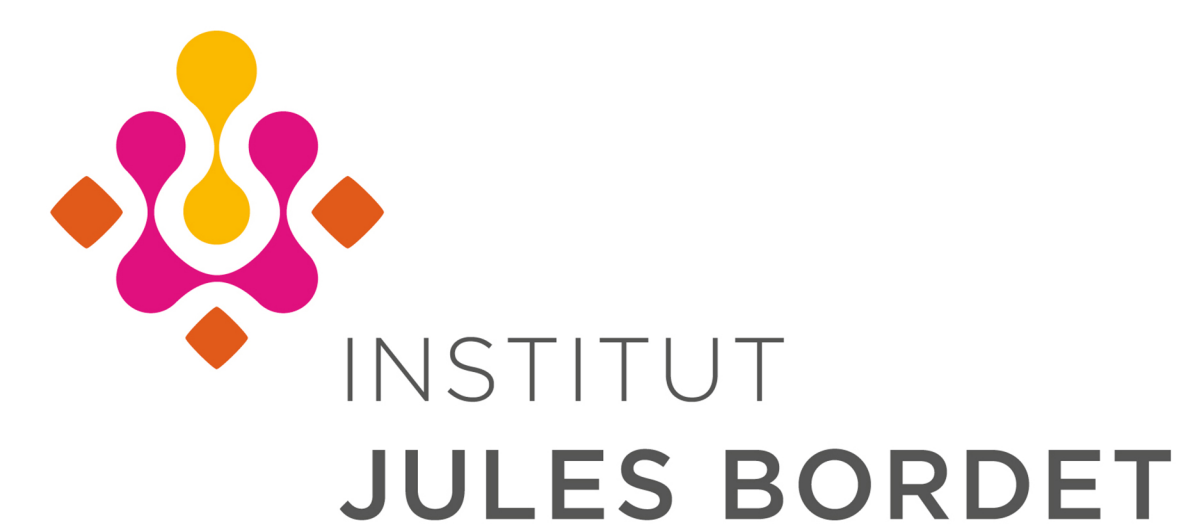


Magnetic resonance imaging targeted biopsy in biopsy-naïve patients and the risk of overtreatment in prostate cancer: a grading issue

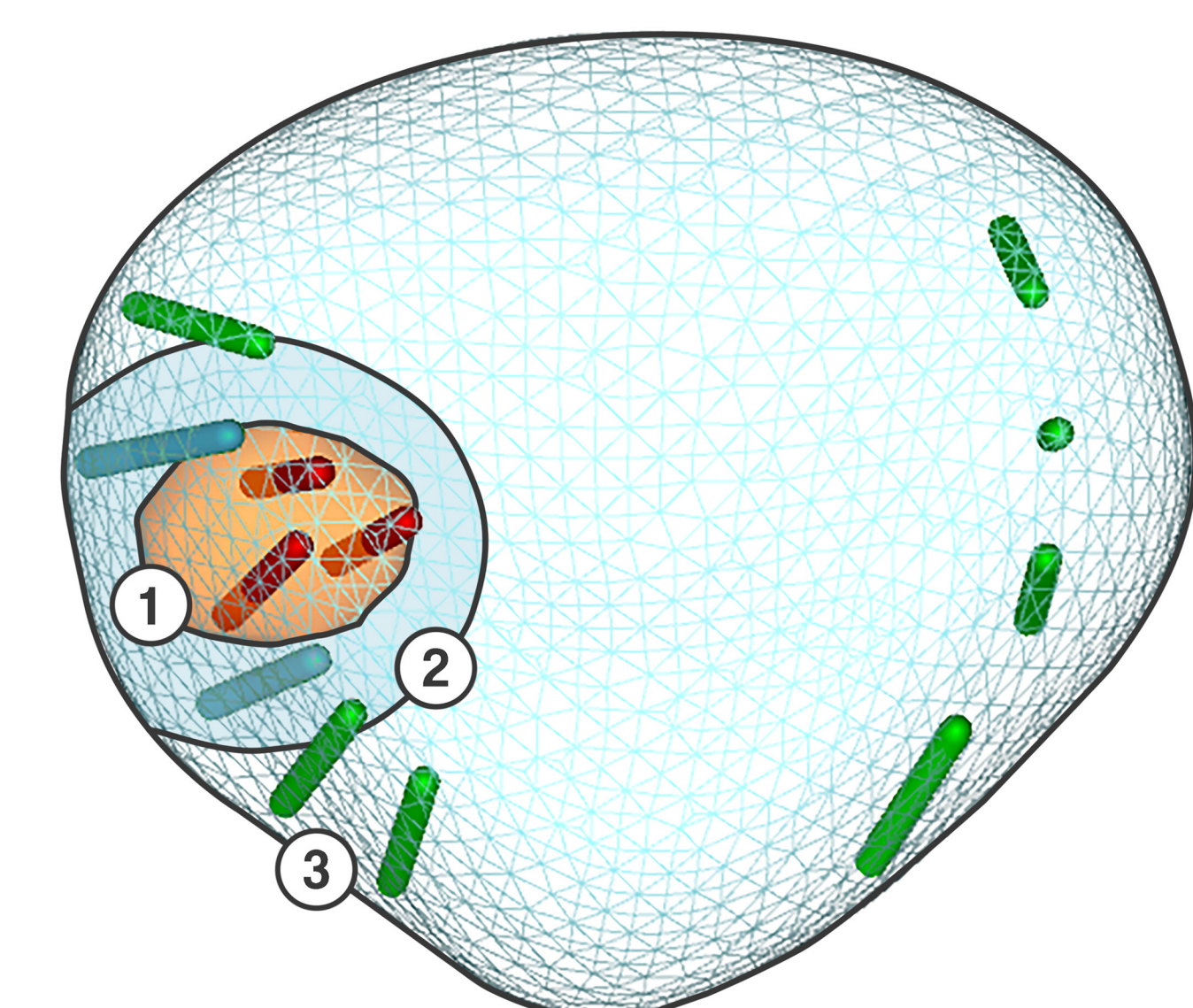


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Objectives

To evaluate the impact of applying the 2014 and 2019 International Society of Urological Pathology (ISUP) recommendations **on grade group distribution and concordance with radical prostatectomy (RP)**



Materials and Methods

Overall, 655 biopsy-naïve patients diagnosed by magnetic resonance imaging (MRI) targeted and systematic biopsies for PI-RADS \geq 3 lesions were identified from a prospectively maintained database from 2016 and 2022.

Clinically significant prostate cancer was detected in 249 patients, of whom 69 underwent RP.

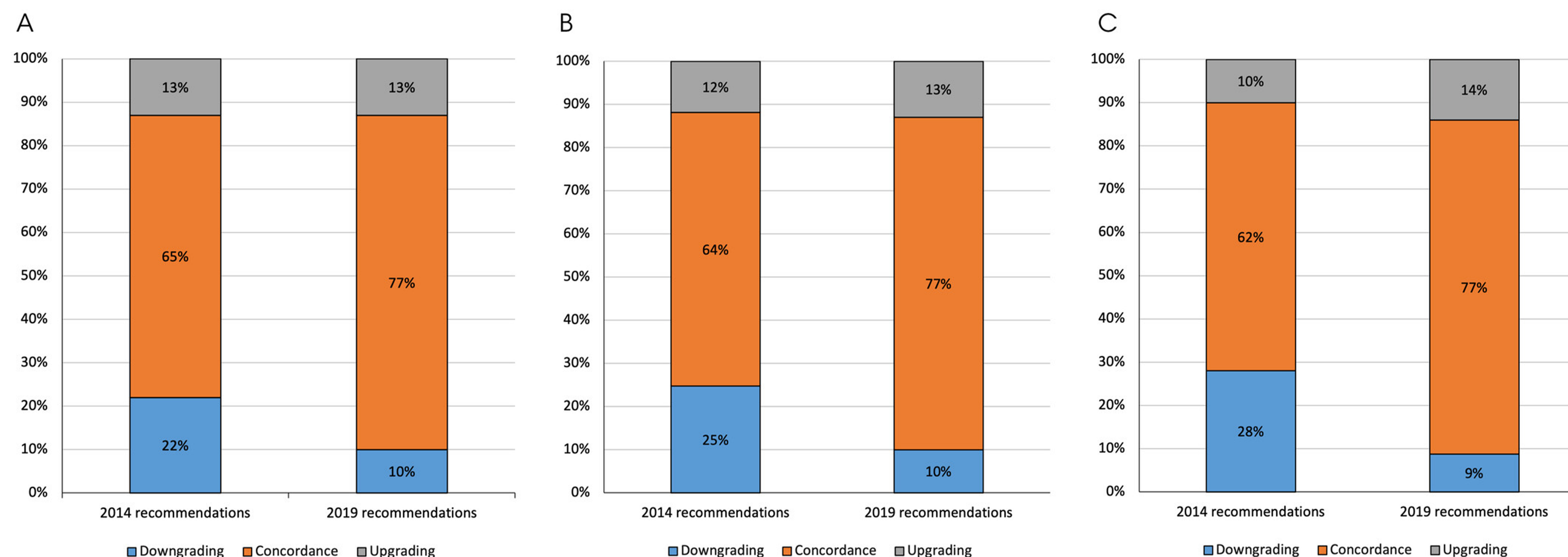
Wilcoxon signed rank and McNemar's tests were used to compare the ISUP grade group distribution and concordance with RP after applying the 2014 (i.e., highest grade) and 2019 (i.e., global grade) ISUP recommendations, respectively

Results and Conclusions

Compared to the 2014 ISUP recommendations, the 2019 ISUP recommendations were associated with a **significant decrease in ISUP Grade Group 4** (range of difference from -13% to -5%) and an increase in ISUP Grade Group 2 (range of difference from +6% to +11%) in MRI targeted biopsy only, MRI targeted with perilesional biopsies, and MRI targeted with systematic biopsies (all $p < 0.01$).

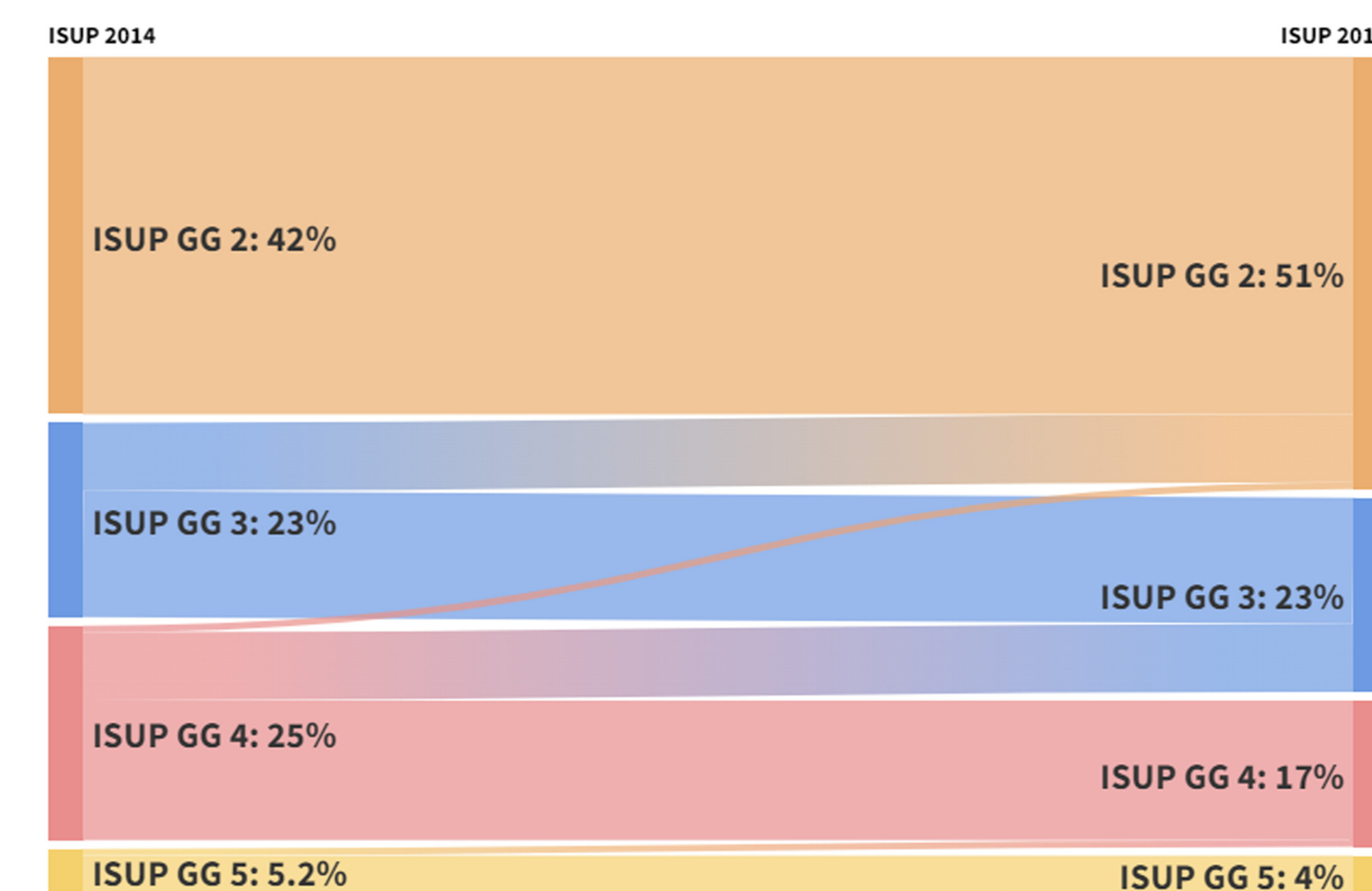
In patients who underwent RP, a **significant decrease in downgrading** was observed with all biopsy strategies (range of difference from -19% to -12%; $p \leq 0.008$), along with an **increase in concordance with RP specimen** (range of difference from +12% to +13%; $p \leq 0.02$).

The use of the 2019 ISUP recommendations mitigates the grade migration induced by MRI targeted biopsy and improves the concordance with the final RP specimen



ISUP grade group accuracy after whole-mount radical prostatectomy between 2014 and 2019 ISUP recommendations according to (A) MRI targeted biopsy only, (B) MRI targeted including perilesional biopsies, and (C) MRI targeted and systematic biopsies

MRI Targeted and Perilesional Biopsies
ISUP 2014 vs ISUP 2019



Sankey diagram illustrating the ISUP grade group (GG) distribution between 2014 (left column) and 2019 (right column) ISUP recommendations when considering MRI targeted and perilesional biopsies.