



# MRI-guided Biopsy to Evaluate Prostate Cancer Severity in African-American Men

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## BACKGROUND

- The mortality rate of prostate cancer has long been considered higher among African-American (AA) men than any other ethnically-defined group.
- Most available diagnostic information has been obtained by ultrasound-guided prostate biopsy.

## PURPOSE

To study the possibility that MRI-guided biopsy might provide histologic clarification of the apparent disparity, we studied use of the new modality in AA and other men at three time points in prostate cancer care:

- At diagnosis
- During active surveillance (AS)
- At final pathology after radical prostatectomy

## METHODS

- Subjects were a consecutive series of 1002 men who underwent MRI-guided biopsy at UCLA, combining both systematic and lesion-targeted sampling, from 2009-18.
- Pathologic upgrading was defined as an increase in Gleason Grade (GG) at structured follow-up biopsy during AS or at whole-mount sectioning (prostatectomy).
- Statistical significance ( $p < 0.05$ ) was assessed using the Mann-Whitney-U test for continuous data, the Chi-square test (or Fisher's exact if necessary) for categorical data, and the Kaplan-Meier estimator to calculate progression-free survival probabilities.

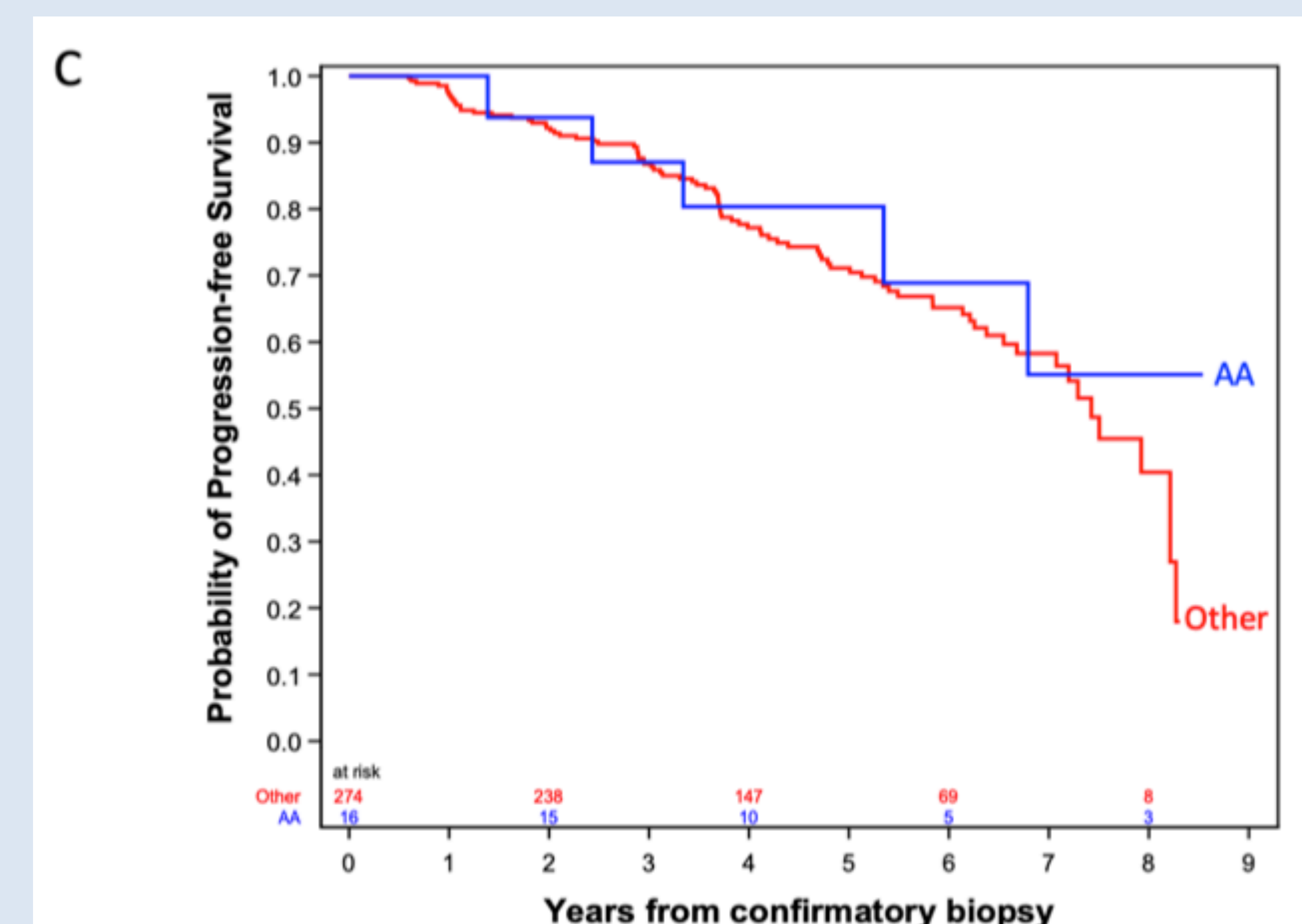
## RESULTS

**Table 1.** Patient characteristics at baseline (n=1002)

Characteristic	AA	Other	p-value
Number of patients	57	945	
Age, mean (SD)	63.7 (8.7)	64.9 (7.6)	0.244
Prostate Volume, cc, median [IQR]	38.8 [29.0, 51.0]	44.6 [34.0, 60.1]	0.035 <sup>a</sup>
PSA, ng/mL, median [IQR]	6.5 [4.9, 10.3]	6.0 [4.4, 8.3]	0.140 <sup>a</sup>
PSAD, ng/mL/cc, median [IQR]	0.16 [0.08, 0.31]	0.13 [0.09, 0.20]	0.033 <sup>a</sup>
<0.15	46% (26)	59% (560)	0.039
≥0.15	54% (31)	41% (382)	
Palpable abnormality	16% (9)	15.2% (143)	0.898
MRI Results, % (n)			
Negative MRI	21% (12)	24.5% (231)	0.553
Positive MRI	79% (45)	75.3% (711)	
PI-RADS v2, % (n)			
3	44% (20)	34% (239)	0.307
4	29% (13)	37% (266)	
5	27% (12)	29% (206)	

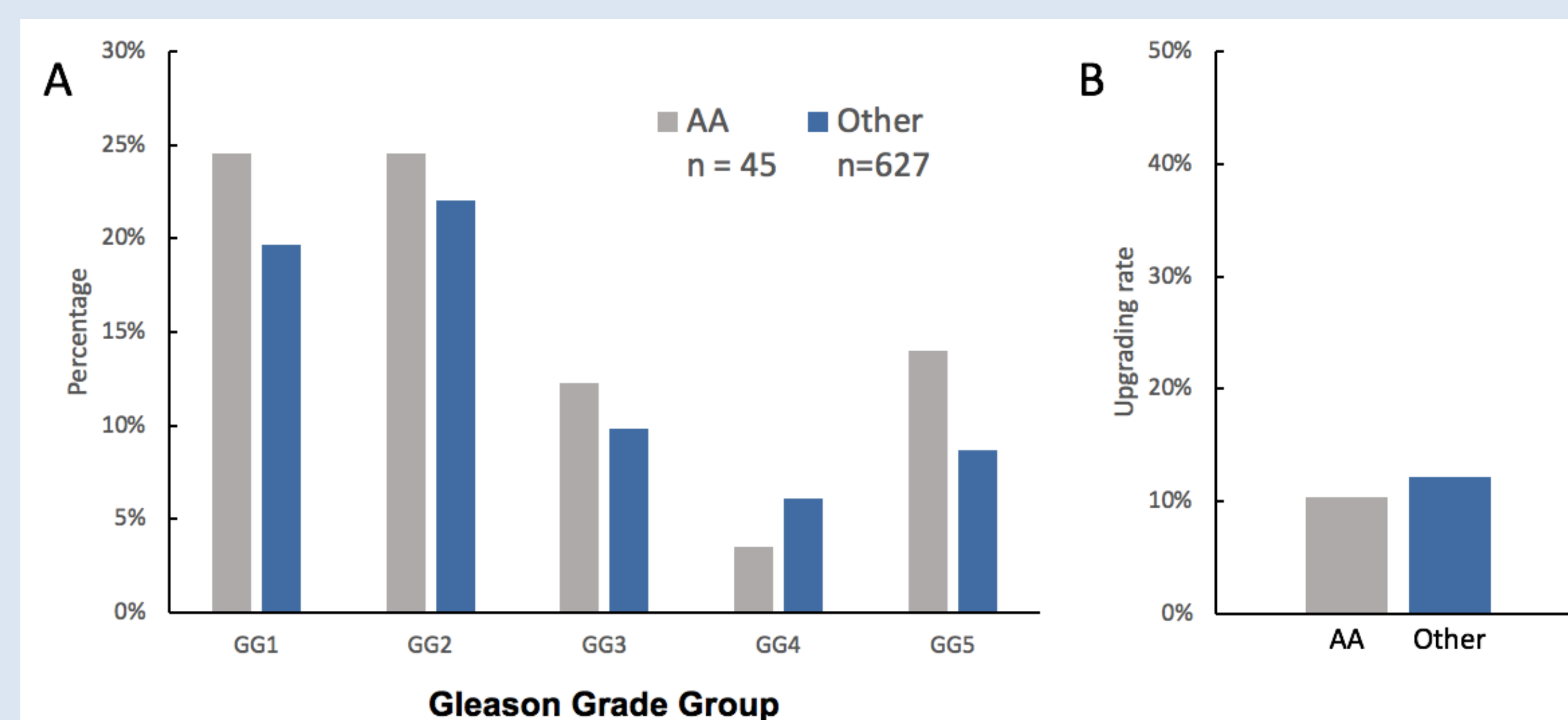
a. Mann-Whitney U test

No differences in progression-free survival during AS



**Figure 2.** Progression-free survival for patients in AS with low-risk prostate cancer (progression defined as ≥GG2 on subsequent biopsy).

## Histological results after MRI-guided biopsy



**Figure 1. (A) Gleason grade from MRI-guided diagnostic biopsies (B) Progression-free survival for patients in AS with low-risk prostate cancer (progression defined as ≥GG2 on subsequent biopsy).**

## Summary and Conclusions

- In the present cohort of men studied with contemporary MRI-guided biopsy, aggressiveness of prostate cancer (judged histologically) was the same for both groups at initial biopsy, at prostatectomy, and during AS.
- Unlike similar investigations that use conventional ultrasound-guided biopsy, we found no significant histologic differences between AA and other men at three important points in prostate cancer care.
- This suggests that differences previously observed were not based on physiology alone.
- Furthermore, these data indicate that after MRI-guided biopsy, entry into AS programs for AA men with prostate cancer is appropriate when low-risk pathology is determined using MRI-guided biopsy.