



Does Equal Access Mean Equal Treatment? Race and Treatment Received in an Equal Access Medical Center



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Abstract

Introduction: On a population level vs. white men, black men have a 67% higher risk of prostate cancer (PC) and a >2-fold increased risk of PC death. Prior studies found black men were less likely to receive surgery for their PC, but these studies were not done in an equal access center. We tested the association of race with treatment received in an equal access center.

Methods: We retrospectively collected data on all men undergoing a prostate biopsy at the Durham VA between 1988 and 2019. In men diagnosed with PC, we determined the first treatment received within 6 months after diagnosis. Relative to surgery, treatments were grouped as no treatment/active surveillance, radiation, or hormonal. Men who received systemic treatment along with curative intent were considered in the curative intent group (i.e. radiation + hormonal was considered radiation). Baseline features were examined by race using Rank-Sum and Chi-Squared tests. We examined if black race (vs. white) was associated with treatment type using multinomial logistic regression. Results were adjusted for demographic and clinicopathological features.

Results: Complete data were available for 2,799 men of which 1,670 (59.7%) were black. Black men were younger (63 vs. 66 yrs, p<0.0001), had higher median PSA (7.5 vs. 6.9 ng/ml, p<0.001), and were diagnosed more recently (2008 vs. 2006, p<0.0001). White men had more low-grade GG1 PCs (50% vs. 45%) relative to black men, but black men had more high-grade GG2+ PCs (55% vs. 50%) than white men (p=0.004). After adjusting for confounders, relative to receipt of surgery, black men were more likely than white men to receive radiation therapy (odds ratio, [OR]: 1.32, 95%CI 1.09-1.61, p=0.006). There were no differences between rates of no treatment (p=0.29) or hormonal therapy (p=0.93) between black and white men.

Conclusion: Among men diagnosed with PC at an equal access medical center, black men were more likely to undergo radiation than surgery compared to white men. There were no differences in rates of no treatment or hormonal therapy. These results confirm prior studies and show that even in an equal access setting, black men are more likely to receive radiation relative to surgery. More research is needed to understand the factors (i.e. patient vs. provider factors) that drive black men to receive more radiation vs. surgery.

Background

- Black men have higher PC incidence and mortality vs. white men
- Prior studies from non-equal access centers suggest black men less likely to undergo surgery.
- Unknown if results are similar in an equal access center

Objective

- Test whether race is associated with treatment received in an equal access center

Materials and Methods

- 2,799 men newly diagnosed PC at the Durham VA Center from 1988-2019
- Assessed treatment received within 6 months of diagnosis
- Characteristics compared by race with rank-sum test or χ^2
- Multivariable multinomial logistic regression to test if race predicted treatment

Table 1. Patient characteristics by race

| | Black (N=1670) | White (N=1129) | p value |
|--------------------|----------------|----------------|---------------------|
| Age at biopsy | | | <0.001 ¹ |
| Median | 63 | 66 | |
| Q1, Q3 | 58, 68 | 61, 70 | |
| Year of biopsy | | | <0.001 ¹ |
| Median | 2008 | 2006 | |
| Q1, Q3 | 2004, 2013 | 2002, 2011 | |
| Clinical stage | | | <0.001 ² |
| T1 | 1058 (63%) | 565 (50%) | |
| T2-T4 | 481 (29%) | 449 (40%) | |
| Unknown | 131 (8%) | 115 (10%) | |
| PSA | | | <0.001 ¹ |
| Median | 7.5 | 6.9 | |
| Q1, Q3 | 5.2, 13.9 | 5.0, 10.6 | |
| Biopsy grade group | | | 0.004 ² |
| 1 | 759 (45%) | 566 (50%) | |
| 2-3 | 665 (40%) | 380 (34%) | |
| 4-5 | 246 (15%) | 183 (16%) | |
| Percent + cores | | | 0.312 ¹ |
| Median | 33.3 | 33.3 | |
| Q1, Q3 | 16.7, 58.3 | 16.7, 58.3 | |
| Primary treatment | | | 0.147 ² |
| 1. No treatment | 259 (16%) | 187 (17%) | |
| 2. Surgery | 501 (30%) | 358 (32%) | |
| 3. Radiation | 744 (45%) | 455 (40%) | |
| 4. Hormonal | 166 (10%) | 129 (11%) | |

¹Wilcoxon ²Chi-Square

Results

Table 2. Odds ratio for black men to receive different treatments relative to white men

| | Unadjusted | | Adjusted | |
|--------------|------------------|---------|------------------|---------|
| Outcome | OR (95% CI) | p-value | OR (95% CI) | p-value |
| Surgery | Ref. | | Ref. | |
| No treatment | 0.99 (0.79-1.25) | 0.93 | 1.16 (0.88-1.52) | 0.29 |
| Radiation | 1.17 (0.98-1.40) | 0.09 | 1.32 (1.09-1.61) | 0.006 |
| Hormonal | 0.92 (0.70-1.20) | 0.54 | 0.98 (0.68-1.43) | 0.93 |

Summary of Findings

- Black men presented at younger age and more T1 cancers, but with higher PSA and higher grade disease.
- After adjustment for confounders, black men were 32% (p=0.006) more likely to receive radiation vs. surgery compared to white men, but no difference in no treatment or hormonal therapy.

Conclusions

- Even in an equal access center, black men are more likely to receive radiation relative to surgery.
- More research needed to understand the factors (i.e. patient vs. provider factors) that drive black men to receive more radiation vs. surgery