



Original article

The effect of treatment at minority-serving hospitals on outcomes for bladder cancer

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Abstract

Objectives: Healthcare for racial minorities is densely concentrated at a small subset of hospitals in the United States. Understanding long-term outcomes at these minority-serving hospitals is highly relevant to elucidating the sources of racial disparities in cancer care. We investigated the effect of treatment at a minority-serving hospital on overall survival and receipt of definitive treatment for bladder cancer.

Materials and methods: Using the National Cancer Database, we identified all patients diagnosed with clinically localized, muscle-invasive bladder cancer between 2004 and 2012. We defined “minority-serving hospitals” as institutions in the top decile by proportion of Black and Hispanic patients within this cohort. Univariate and multivariable analyses were performed to assess the sociodemographic, clinical, and hospital-level factors influencing overall survival and receipt of definitive treatment for bladder cancer.

Results: In adjusted analyses, there was no significant difference in overall survival between patients treated at minority-serving hospitals versus those treated at nonminority-serving hospitals (hazard ratio = 0.95, 95% CI: 0.90–1.01). There was also no significance in receipt of definitive treatment between the two hospital types (odds ratio [OR] = 0.85, 95% CI: 0.68–1.06). Black race was independently associated with increased likelihood of mortality (hazard ratio = 1.08, 95% CI: 1.03–1.14) and decreased odds of receiving appropriate definitive treatment (OR = 0.73, 95% CI: 0.66–0.82).

Conclusions: There was no difference between minority-serving and nonminority-serving hospitals in overall survival or receipt of definitive treatment. Black patients suffered worse survival and were less likely to receive definitive treatment for bladder cancer regardless of the type of hospital in which they were treated. © 2018 Elsevier Inc. All rights reserved.

Keywords: Bladder cancer; Racial disparities; Health services

1. Introduction

Racial disparities permeate a wide spectrum of disease in the United States. Even for individuals with equivalent risk factors, those who are members of racial/ethnic minorities

often receive worse care than their white counterparts [1]. This trend has been seen in Blacks and Latinos in several diseases, ranging from cancer to cardiovascular disease [2,3]. Urology-specific disparities have been identified in prostate and bladder cancer [4–6].

Focus has recently shifted from merely characterizing the existence of these disparities to localizing more specifically where and why they occur. Race-based differences in care may be due to who the patient is, where they receive care,

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or a combination of both. This “within/between” distinction has been previously investigated in a variety of fields [7]. Furthermore, care for racial minorities is concentrated among a small subset of providers; for instance, 5% of US hospitals are responsible for the care of nearly half of all elderly Black patients [8]. Thus, understanding outcomes at these minority-serving hospitals has clear relevance to localizing the sources of race-based health disparities.

Minority-serving hospitals (MSH) have previously been found to have significantly higher rates of readmission and mortality for common medical conditions and surgical procedures compared to non-MSH [9–11]. Constrained budgets, deficient quality of transitional care services, and suboptimal adherence to treatment guidelines are all potential contributors to these adverse outcomes. However, little is known about the effects of treatment at MSH on long-term outcomes in cancer treatment. One group found higher rates of readmission and inpatient mortality for patients undergoing surgery for colorectal cancer at MSH [12], but it remains to be seen whether this trend applies to other major cancers. Although previous studies have evaluated outcomes in safety-net hospitals [13–15], studying MSH offers the unique perspective of focusing primarily on a hospital’s racial/ethnic composition as opposed to its payer mix.

Given the substantial multidisciplinary resources required to diagnose and treat muscle-invasive bladder cancer (MIBC), we hypothesized that men and women treated for this disease at MSH would suffer worse outcomes compared to those treated at non-MSH. To assess this, we used a large cancer database to investigate whether there is a difference between MSH and non-MSH in overall survival for patients with localized MIBC. We also determined the extent to which receipt of appropriate definitive treatment differed between these hospital types.

2. Materials and methods

2.1. Data source

Data were obtained from the National Cancer Database (NCDB), a national cancer registry established by the Commission on Cancer (CoC) of the American Cancer Society. It includes patients seen at one of 1,500 participating CoC-accredited hospitals for any portion of their diagnosis or treatment. The NCDB registry captures >70% of incident cancers in the United States and comprises >29 million unique cases [16]. Trained data abstractors employ standardized methodology to collect sociodemographic and clinical data, including tumor type, stage, grade, and treatments [17].

2.2. Cohort selection

We identified 391,214 individuals diagnosed with bladder cancer between 2004 and 2012 using the International Classification of Diseases for Oncology, Third Edition, topography codes C67.0–C67.9. We then selected men and women with clinically localized MIBC (cT2–T4bN0M0) based on the American Joint Committee on Cancer staging system [18]. We excluded individuals who had missing follow-up information as well as those diagnosed age <40 years, as facility information on these patients is censored by NCDB for confidentiality purposes (Fig. 1).

2.3. Defining “Minority-Serving Hospitals”

The exposure of the study was treatment at MSH. To identify MSH, we calculated the proportion of each

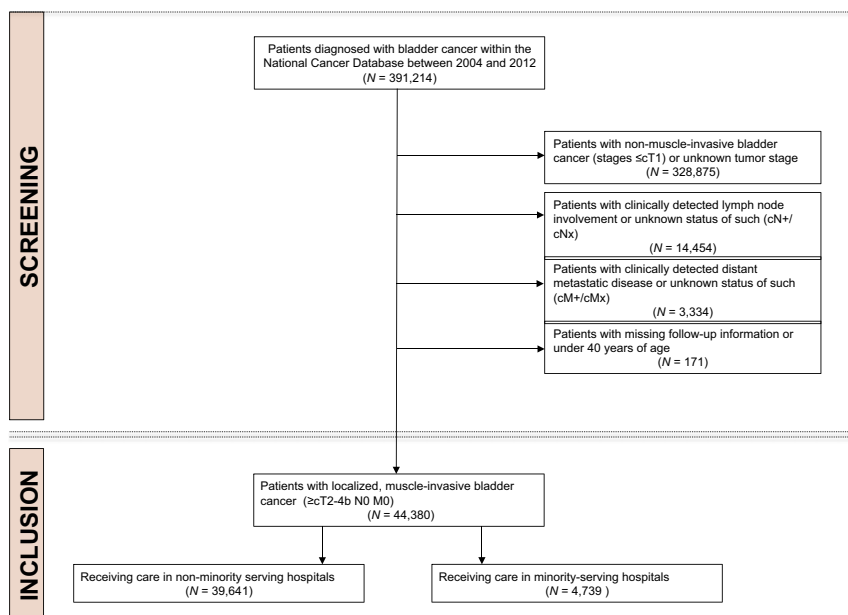


Fig. 1. Flowchart diagram of cohort selection criteria.

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