Race as an Independent Predictor of Temporal Delay in Time to Diagnosis and Treatment in Patients with Cervical Stenosis: A Study of 133 ACDF Patients

Owoicho Adogwa M.D. M.P.H; Aladine A. Elsamadicy BE; Ankit Mehta MD; Raul A Vasquez MD; Joseph S. Cheng MD, MS; Carlos Antonio Bagley MD; Isaac O. Karikari MD

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Introduction

Prompt decompression in clinically significant cervical stenosis is important in the prevention of neurologic sequelae. Early decompression of symptomatic cervical stenosis is associated with superior outcomes. Disparities exist along the continuum on spine care, with black patients both receiving less surgery and experiencing worse post-operative outcomes. We sought to test our hypothesis that black race is an independent predictor for a prolonged time to diagnosis and treatment.

Methods

The medical records of 133 patients undergoing elective ACDF surgery at a major academic medical center between 2010 and 2012 were reviewed. All patients had prospectively collected patient reported outcomes measures including Visual Analog Pain Scale. Data on patient demographics, comorbidities, and post-operative complication rates were retrospectively collected. Multivariate analysis was performed on variables that trended with delay in diagnosis and treatment on univariate analysis($p<0.10$) to determine independent($p<0.05$) predictors of delay in diagnosis and treatment.

Results

: Patient demographics of the cohort included 45.87% male, 80.30% white, 71.97% married, 53.72 employed, 18.8% with a history of depression and 19.55% with anxiety, Table 1. The mean ± standard deviation age (years) was 54.02±11.74 and baseline VAS-Neck Pain was 4.87±3.19, Table 1. The median[IQR] fusion levels for the cohort was 2[1-2], and urinary tract infection was the most common post-operative complication at 2.29%, Table 1. In a multivariate linear regression model to independently identify predictors of increased duration of preoperative pain, Race was the only statistically significant variable ($p=0.0212$), Table 2. Other variables in the model included depression, anxiety, age, gender, employment status, marital status, BMI and baseline VAS-Neck Pain score, Table 2.

Conclusions

Our study demonstrates that black race is an independent risk factor for a temporal delay in diagnosis and treatment of symptomatic cervical stenosis. While the reasons for the observed delay are not entirely clear, awareness of this disparity may help surgeons avoid undesirable delays in operating on black patients.

Learning Objectives

By the conclusion of this session, participants should be able to:

1) Describe the importance of race on delayed surgical treatment.

2) Discuss, in small groups, the racial impact of delayed surgical treatment.

3) Identify other possible risk factors that may effect delayed surgical treatment.