Oral Session 2

Research Study

Title: “The Association Between Race and Diagnostic Delay of Retinoblastoma in U.S. Children”

Alexander Black; Amanda E. Kahn; Roberto Warman, MD; Noël C. Barengo MD, PhD, MPH

Category: Epidemiology; Public Health

Keywords: Retinoblastoma, Race; Ethnicity; Diagnosis; complication; treatment; delay

Introduction and Objective. Retinoblastoma is a common childhood cancer in the United States. Average age of diagnosis is at 18-months with 200-300 new cases annually. Many factors may influence diagnostic delay, such as socioeconomic status, race/ethnicity, and access to care. Previous studies have not used data from the Surveillance, Epidemiology, and End Results (SEER) database to examine whether or not an association between race and diagnostic delay of retinoblastoma exists in the US. The aim of this study was to explore associations between race and age at diagnosis of retinoblastoma in children in the United States.

Methods. An analytical non-concurrent cohort study was conducted using 1988-2018 data from SEER. Children ages 0-17 with retinoblastoma were included (n=758). Participants with missing data were excluded (n=11; final cohort: n=747). The main exposure was race (white, black, Asian/Pacific Islanders, American Indian/Alaska native) and the main outcome was age at diagnosis. Diagnosis at or after two years of age was considered diagnostic delay. Covariates included sex, rural-urban continuum, ethnicity, decade of diagnosis, and laterality of disease. Unadjusted and adjusted logistic regression analyses were performed to calculate odds ratios (OR) and 95% confidence intervals (CI).

Results. The prevalence of diagnostic delay in study participants was 33% (n=247). No statistically significant association was found between racial/ethnic groups and age at diagnosis (OR 0.61-0.99; p=0.92 and OR 0.86; p=0.66, respectively). Girls were more likely to be diagnosed earlier than boys (OR 0.62; 95% CI 0.44-0.88; p=0.042). No association was found between urban vs. rural participants (OR 1.02; 95% CI 0.60-1.75) or between decades (OR 0.81; 95% CI 0.54-1.22 and OR 0.96; 95% CI 0.62-1.47).

Conclusions-Implications. Timely identification of retinoblastoma in children does not differ based on race. Thus, current screening practices and policies protect children from delay in diagnosis of retinoblastoma. The reason as to why females are more likely to be diagnosed at age less than two years old when compared to males may be examined in future studies.