The Impact of Acquired Immunodeficiency Syndrome (AIDS) on Outcomes and Complications Following Total Hip Arthroplasty: A Propensity Scored-Match Analysis

Steven Burekhovich, Alex Chanki Jung, Ryan Kong, Harleen Kaur[1], FAISAL ELALI, Elver Shei-Wah Ho, Juhayer S Alam, Jared Newman, David H Mai, Aditya V Maheshwari[1], Qais Naziri[2]
[1]SUNY Downstate Medical Center, [2]SUNY DOWNSTATE MEDICAL CENTER

INTRODUCTION: The purpose of this study is to compare outcomes and complication rates between patients with and without Acquired Immunodeficiency Syndrome (AIDS) undergoing surgery for total hip arthroplasty (THA). There is limited literature evaluating the impact of AIDS on long-term outcomes after THA surgery.

METHODS: Using the National Inpatient Sample (NIS), patients admitted from 2005 to 2012 with a diagnosis of AIDS who underwent THA were retrospectively reviewed. A 1:1 propensity score-match (PSM) by age, gender, and obesity status was performed before analyzing data. Univariate analyses evaluated demographics, complications, subsequent revision, and mortality. Multivariate binary logistic regression models were also conducted to identify correlations between AIDS and postoperative THA outcomes, controlling for age, sex, and obesity status.

RESULTS: A total of 1294 propensity score-matched patients were identified (AIDS: n=647; non-AIDS: n=647). Both cohorts were nearly identical in gender (AIDS: 18.2% female, non-AIDS: 16.8% female p=0.511) and obesity status (AIDS: 4.9%, non-AIDS: 3.7% p=0.215). The AIDS cohort was younger than the non-AIDS cohort age (AIDS: 48.87 years, non-AIDS: 50.55 years p=0.003). The AIDS cohort, compared to the non-AIDS cohort, had greater Deyo score (AIDS: 6.60, non-AIDS: 0.35, p<0.001), length of stay (AIDS: 4.73 days, non-AIDS: 3.24 days, p<0.001), and total hospital charge (AIDS: $63,206.35, non-AIDS: $49,737.20, p<0.001). The average incidence rate between 2005 and 2012 for patients with AIDS undergoing THA is 2.64 [2.30 – 2.98] per 1,000,000 person-years (Figure 1). This incidence rate increased by 7.76% during this time period (Figure 1). With a 1:1 PSM, patients with AIDS, compared to non-AIDS patients, had greater rates for surgical complication, wound complication, blood transfusion, medical complication, pneumonia, and acute renal failure (all p<0.05) (Table 1). AIDS was an independent risk factor of a surgical complication (OR:2.148 [1.588 – 2.904], p<0.001), wound complication (OR:3.783 [1.230 – 11.641], p=0.020), blood transfusion (OR:2.551 [1.849 – 3.520], p<0.001), medical complication (OR:3.546 [1.966 – 6.395], p<0.001), pneumonia (OR:8.715 [1.088 – 69.820], p=0.041), and acute renal failure (OR:5.987 [2.180 – 16.440], p=0.001) (Table 2).

DISCUSSION AND CONCLUSION: In the general population undergoing total hip arthroplasty, patients with AIDS, compared to non-AIDS patients, had greater Deyo scores, surgical charges, and length of stay. The AIDS cohort, compared to the non-AIDS cohort, had greater risk for surgical and medical complications. These results can support management of postoperative expectations and concerns in this patient cohort.