Paper #9

Elevated Fructosamine Levels Are Associated with Increased Risk for PJI

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Introduction: Based on a recent study, fructosamine was shown to have a promising role in predicting adverse outcomes following total knee arthroplasty. The purpose of this study was to assess the utility of fructosamine in predicting adverse outcome in general, and periprosthetic joint infection (PJI) in particular, following total hip arthroplasty (THA).

Methods: A prospective multi-institutional study was conducted. All primary THA were evaluated for glycemic control using fructosamine and HbA1c levels prior to surgery. Adverse outcomes were assessed at a minimum of 1 year from surgery. The primary outcome of interest was PJI, defined per the 2018 criteria. Based on previous studies on the subject, a fructosamine level above 293 µmol/L was used to define inadequate glycemic control and as a predictor for adverse outcomes. Univariate and multivariate regression were conducted to evaluate the association between preoperative fructosamine levels and the development of adverse outcomes and PJI.

Results: Overall 960 patients participated in the present study and were available for follow-up at a minimum 1 year from surgery. Of these, 3.5% (34/960) exhibited inadequate glycemic control based on fructosamine values and these patients were 6.8 times more likely to develop PJI compared to patients who were well controlled (8.8% vs. 1.3%, p=0.014). The association between high fructosamine levels and increased risk for PJI remained significant after adjusting for age, comorbidities and preoperative HbA1c levels in a regression analysis (adjusted OR 5.04, 95%CI 1.2-21.1).

Conclusions: Fructosamine is a good proxy for glycemic control and elevated levels correlate with the risk for subsequent PJI in patients undergoing THA. A strong consideration should be given to the use of fructosamine as a glycemia screening tool in patients undergoing surgery.

Notes