Malnutrition as a Predictor of Increased 90-Day Complications and 2-Year Revision Risk in THA

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INTRODUCTION: The rate of malnutrition in hospitalized patients the United States has been previously shown to be approximately 7%. Previous studies have analyzed the effects of malnutrition in those undergoing total hip arthroplasty (THA) for patients with femoral head osteonecrosis as well as a study investigating 12-month outcomes for patients with markers of malnutrition following a THA; however, there are no studies to date investigating population-based outcomes in matched cohorts with and without malnutrition following a THA. The aim of this study is to determine if presence of malnutrition can lead to complications following THA.

METHODS: TriNetX is a large database of electronic medical records created in 2013, including 92 healthcare organizations, that collects data utilizing procedure and diagnoses codes. Using this, medical and surgical outcomes were compared for those undergoing primary THA with and without laboratory markers of malnutrition. Cohorts underwent propensity matching to minimize risk of confounding variables.

RESULTS: A total of 3201 patients were included in each cohort for analysis after matching. Patients with malnutrition carried significantly higher rates of 90 day complications including death (p=0.002), sepsis (OR 3.179 [1.983-5.097]), myocardial infarction (MI) (OR 1.676[1.038-2.708]), pneumonia (OR 1.776 [1.246-2.531]), periprosthetic joint infection (PJI) (OR 1.575 [1.114-2.227]), periprosthetic fracture (OR 1.808 [1.095-2.987]), revision THA (OR 1.713 [1.207-2.431]), transfusion requirements (OR 3.683 [2.838-4.775]), and anemia (OR 1.878 [1.567-2.249]). At 2 years follow up there was still a significantly greater rate of these complications in those with malnutrition. At 2 years there are statistically higher rates of wound problems, DVT, stroke, and PE.

DISCUSSION AND CONCLUSION: The presence of malnutrition carries both short and long-term risk of death, sepsis, MI, pneumonia, PJI, periprosthetic fracture, revision THA, anemia, and increased transfusion requirements. Preoperative nutrition optimization is critical to reduce risk of complications.