Importance of an Integrated Practice Unit for the Reduction of Body Mass Index Prior to Total Joint Arthroplasty

Ayane Rossano, Stephanie Price, Chizitam Francis Ibezim, Malik Morgan¹, Sina Ramtin², David C Ring, Kevin John Bozic³, Karl Marc Koenig

¹UT Health Dell Medical School, ²Dell Medical School At Austin, ³Dell Med Sch, Univ of Texas At Austin

INTRODUCTION: Obesity in Total Joint Arthroplasty (TJA) has been well documented to be associated with a multitude of perioperative complications such as increased risk of deep infection, component malpositioning, and revisions. Therefore, emphasis should be placed on facilitating the optimization of patients before TJA surgery. An Integrated Practice Unit (IPU) provides patients with seamless and frequent access to in-house nutritionists who possess specialized experience with arthroplasty candidates. The purpose of this study was to determine the impact of an IPU nutritionist on Body Mass Index (BMI) reduction prior to undergoing TJA.

METHODS: A retrospective chart review was undertaken for patients who sought hip or knee arthroplasty at an urban Musculoskeletal Integrated Practice Unit (IPU) from November 2017 to September 2022. Patients with a presenting BMI over 40 kg/m² were included. Referrals to the IPU nutritionist were recorded and claims data was utilized to determine the number of subsequent visits. BMI was tracked from time of referral to 6 months after referral, or from initial visit to 6 months after initial visit for patients not referred. Demographic variables collected included age, race, gender, and payor status. Baseline Generalized Anxiety Disorder (GAD), Patient Health Questionnaire 9 (PHQ-9), and baseline and follow-up preoperative Patient Reported Outcome Measures (PROMs) were collected. Data was analyzed through multivariate logistic regression and corollary models with significance set at p < 0.05. RESULTS:

A total of 356 patients were included for analysis. The average BMI reduction of those who were referred to the IPU nutritionist (n = 197) was 0.3, compared to an average BMI increase of 0.59 in those who did not work with an IPU nutritionist (n = 159) (p = 0.02). Variables associated with a decrease in BMI by 6 months were Medicare insurance (p = 0.0219), at least one appointment with the IPU nutritionist (p = 0.0029), and a higher number of in-person nutritionist visits (p = 0.0289). The PROMs for patients who visited with the IPU nutritionist improved by 5.1 points on average, while PROMs worsened by an average of 4.9 points for those who did not meet with an IPU nutritionist (p = 0.000002). There was no correlation with time to referral from initial presentation, and no impact of GAD and PHQ on the change in BMI after nutritionist referral.

DISCUSSION AND CONCLUSION: The accessibility of a nutritionist is not only associated with a higher BMI reduction rate, but it also corresponds with a significant improvement in PROMs. This study demonstrates the impact an IPU can have on optimizing obese patients for surgery and improving preoperative functional outcome measures.