**Paper #31**

**Potential Effects of Imposing Body Mass Index Thresholds on Patient Reported Outcome Measures in TKAs**

Hiba K. Anis, MD, Alexander Roth, MD, Alison K. Klika, MS, Michael R. Bloomfield, MD, Jonathan L. Schaffer, MD, Viktor E. Krebs, MD, Wael K. Barsoum, MD, Robert M. Molloy, MD, Carlos A. Higuera, MD, **Nicolas S. Piuzzi, MD**

**Introduction:** Obese patients can benefit from total knee arthroplasty (TKA), however surgeons often impose operative thresholds using body mass index (BMI) that may deprive obese patients of improvements in pain/function. The purpose of this study was to 1) investigate the relationship between BMI and improvements in patient reported outcome measures (PROMs), and 2) evaluate the trade-off in enforcing BMI-based eligibility criteria.

**Methods:** Data were prospectively collected on a cohort of orthopaedic patients from 2015-2018 in a single healthcare system, yielding 4,126 TKAs of which 3,214 had 1-year follow-up. Demographic data and preoperative and postoperative Knee Injury and Osteoarthritis Outcome Scores (KOOS) pain, Physical Function Shortform (PS), and knee-related Quality-of-Life (KRQOL) scores were collected. Clinically meaningful improvement was defined as a 15-point change for Pain and PS, and 14-point for KRQOL. Median BMI-stratified scores were obtained for the aforementioned PROMs and, using various BMI thresholds, the number of surgeries denied to avoid failed improvements were calculated.

**Results:** An increasing BMI was associated with increases in median improvements in PROMs. For KOOS pain scores, improvements were greater for a BMI ≥40 kg/m2 compared to those with a BMI of 30-34.9 kg/m2 (47.44 vs. 44.44). Similar findings were seen for KOOS PS (28.4 vs. 26.1) and KRQOL (50 vs. 48.96). With a BMI cut-off of 30kg/m2, for every patient that failed to improve their KOOS pain score after surgery, 9 patients would have improved, while with a BMI cut-off of 40 kg/m2, 11 patients would have improved. For both for KOOS-PS, (3.2 vs 3.6) and for KOOS-KRQOL (6.8 vs. 7.4) there were similar findings.

**Conclusions:** As BMI increases, there is also an increase in median PROM improvement. There appears to be little effect on PROMs by enforcing a BMI threshold for surgery as patients improve more as their BMI increases.