Impact of Obesity on the Outcomes of Aseptic Revision Total Knee Arthroplasty

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INTRODUCTION: Obesity is a known risk factor for revision following primary total knee arthroplasty (TKA), but its impact on the outcomes of aseptic revision TKA are less known. This study aims to evaluate the impact of BMI on the rates of revision, reoperation, and reoperation for infection following aseptic revision TKA.

METHODS: We retrospectively identified 2870 first-time aseptic revision TKAs performed at a single academic institution between 2000 and 2022. The mean age was 69 years and 58% were female. The mean BMI was 33 kg/m², and 14% had a BMI over 40 kg/m². Kaplan- Meier survivorship analyses and Cox regression adjusting for baseline demographics were performed. The impact of BMI on survivorship was analyzed in increments of 5 BMI points. The mean follow-up was 5 years.

RESULTS: The 5-year survivorships free of any revision, any reoperation, and any reoperation for infection were 89%, 85%, and 96%, respectively. An increase of BMI by 5 kg/m² increments was not associated with increased risks of revision (p=0.33) or reoperation (p=0.43) but showed a trend towards an increased risk of reoperation for infection (HR 1.1, p=0.06). A BMI above 40 kg/m² was associated with a trend towards increased risk of revision (HR 1.3, p=0.07), a 30% increased risk of reoperation (HR 1.3, p=0.04), and a trend towards an increased risk of reoperation for infection (HR 1.4, p=0.16).

DISCUSSION AND CONCLUSION: In this series of 2870 aseptic revision TKAs, an elevated BMI, particularly above 40 kg/m², was associated with a trend towards increased risks of revision, a significantly increased risk of reoperation, and a trend towards increased risks of reoperation. These findings suggests that BMI is a clinically significant risk factor to consider when evaluating failed TKAs and that risk mitigations strategies should be considered for patients with higher BMI.