Impact of Age Decade on Surgical and Patient-Reported Outcomes Following Total Ankle Arthroplasty

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INTRODUCTION: Increasing life expectancy in the United States has been accompanied by an elevated incidence of degenerative joint disease in various locations, including the ankle. This is often addressed using total ankle arthroplasty (TAA) in older adults. Conversely, TAA can also be used to treat post-traumatic arthritis, which can give rise to similar symptoms and are often observed in younger patients. Previous literature has examined outcomes at the extremes of the age continuum, but there are no studies tracking outcomes over time based on age. Thus, the purpose of this study was to compare surgical and patient-reported outcomes (PROM) between patients in different decades of life undergoing TAA.

METHODS: Adult patients who underwent elective TAA at a tertiary care center (2010-2024) were retrospectively identified and stratified into decades of life ranging from less than 50 to 80+ years old. Demographics and surgical characteristics were collected. The outcomes of interest were readmissions; revisions; time to weightbearing; time to return to daily activities; and PROMs of FAAM VAS and SF-12 PCS scores preoperatively and at 1 year postoperatively. ANOVA or Kruskall-Wallis tests were used to compare continuous variables. Chi-Square or Fisher's Exact tests were used to compare categorical variables.

RESULTS: 787 patients who met inclusion criteria were identified (age < 50: 41; 50-59: 99; 60-69: 260; 70-79: 275; 80+: 112). The 80+ cohort had the lowest BMI (28.8 kg/m2; p = 0.002) and proportion of non-smokers (65.2%; p = 0.026), and highest Charlson Comorbidity Index (4.46; p < 0.001) and proportion of Medicare (59.8%; p < 0.001). Length of stay increased with each decade of life from 1.16 to 2.06 days (p < 0.001). Readmissions, revisions, and time to return to daily activities were comparable between age groups. Time to weightbearing was longest in the 80+ group (40.7 days; p = 0.037). Postoperative FAAM VAS and PCS scores were also best in the 80+ group (p < 0.001 and p = 0.043, respectively).

DISCUSSION AND CONCLUSION: This study identified that while length of stay increased with greater age, it was not associated with differences in readmissions, revisions, or recovery to baseline functionality. In addition, although time to weightbearing was statistically significant, a difference of less than 1 day between groups may not be clinically significant. The favorable PROMs also indicate that older adults are satisfied with the outcomes of their surgery. Surgeons should be cognizant of the potential for adverse outcomes in this patient population, but the otherwise comparable risk profile and PROMs suggest that TAA is safe and effective to perform in all age groups.