Total Knee Arthroplasty in patients aged ≥80: outcomes in 12,718 patients over 20 years from the Scottish Arthroplasty Project

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INTRODUCTION:

The demand for total knee arthroplasty (TKA) in older patients is increasing. Current perceptions regarding risks may result in these patients inappropriately being denied surgery. This study aimed to evaluate TKA outcomes in patients aged ≥80 compared to a younger cohort.

METHODS:

This study retrospectively analysed prospectively collected data from the Scottish Arthroplasty Project. Data were extracted for all patients undergoing primary TKA between 2000 and 2019 in two age groups: 1) ≥80 and 2) 50-79. Hybrid and partial knee replacements and those with an incomplete dataset were excluded. Data were extracted on post-operative complications, infection within 1 year, mortality and revision at any point.

RESULTS:

A total of 120,388 TKAs were performed in the study period. 11% (n=12,718) were performed in patients aged ≥80 and 79% (n=94,552) in patients 50-79. Table 1 compares the rates of post-operative myocardial infarction (within 90 days), acute kidney injury (within 30 days), venous thromboembolism and pulmonary embolism (within 90 days) in the two age groups. Infection was comparable in both groups (1.3% in ≥80 vs 1.1% in 50-79, OR: 0.90, CI: 0.88-1.07). Patients ≥80 survived a mean 6.4 years following TKA compared to 8.4 years for patients aged 50-79. Revision rates were higher in those aged 50-79 (3.2%) compared to ≥80 (1.1%). Revision surgery did not adversely affect mortality in the ≥80 group. After revision, patients survived a mean 7.4 years compared to 6.3 years for those who did not undergo revision.

DISCUSSION AND CONCLUSION:

These registry data show that although post-operative complications occur more frequently in patients aged ≥80 following TKA in Scotland, absolute incidence remains low. Infection rates are comparable across ages. In appropriately selected patients, revision surgery does not appear to adversely affect survival even in those aged ≥80. These data suggest that age alone should not be a barrier to primary or revision TKA.

Patient Age	Post Operative Complication		
	Deep Venous Thromboembolism (DVT) / Pulmonary Embolism (PE)	Myocardial Infarction	Acute Kidney Injury
50 - 79	0.3% / 0.7%	0.3%	1.0%
≥80	0.4% / 0.9%	0.8%	2.2%
OR (CI)	**DVT**: 0.77 (0.75 – 1.03) **PE**: 0.77 (0.75 – 0.94)	0.40 (0.39 – 0.51)	0.42 (0.41 – 0.48)

Table 1. The rates of post-operative venous thromboembolism and pulmonary embolism (within 90 days), myocardial infarction (within 90 days) and acute kidney injury (within 30 days) in the two age groups following TKA. *OR: odds radio, CI: confidence interval.*