Improved Performance of Cementless Total Knee Arthroplasty (TKA) across International **Registries: A 10-year Comparative Review**

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INTRODUCTION:

Cementless fixation in Total Knee Arthroplasty (TKA) has been associated with higher revision rates in the past. However, due to advancements in design, as well as surgical technique, cementless TKA performance has made significantly improved. The advantages of cementless fixation include reduced cement-related complications, shorter operating times and the potential benefits of osseointegration. We aim to assess the improvement in revision rates for cementless TKA over the last 10 years based on international registry reports.

METHODS:

A comprehensive retrospective review was conducted of six major English-speaking knee arthroplasty registries across the world including the National Joint Registry of England and Wales, Northern Islan Isle of Man and Guernsey (herby referred to as British), Swedish, Canadian, American, Australian and New Zealand National Joint Registry. Data was collected from the year 2014 along with the most recent annual report published; 2022 or 2023. Data points collected included usage rates of cemented and cementless prostheses for primary TKA, their respective revisions rates and indications for revision.

RESULTS:

Across four databases, there was an average 8.3% increase in the utilization of cementless fixation for primary TKA over the past decade. Three registries reported a reduction in revision rates for cementless fixation. Lower revision rates for cementless compared to cemented TKA were observed in the most recent American (3.2% cemented vs. 2.8% cementless) and New Zealand annual reports (11.8% cemented vs. 4.5% cementless). In 2022, the British registry reported lower rates of revision for infection with cementless fixation (0.56 vs. 0.89).

DISCUSSION AND CONCLUSION:

International registries demonstrate increased utilisation of cementless TKA. Cementless TKA was reported to have lower revision rates in the most recent US and New Zealand annual reports when compared to cemented TKA.









