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The Effect on Long-Term Survivorship of Surgeon Preference for Posterior Stabilized Or Minimally Stabilized Total Knee Replacement: An Analysis of 63,416 Prostheses.

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Summary:
Is this registry analysis, there was a 45% higher risk of revision for the patients of surgeons who prefer PS TKR compared to the patients of surgeons who prefer MS TKR.

Abstract:
Background
Controversy still exists as to the optimum management of the Posterior Cruciate Ligament (PCL) in Total Knee Arthroplasty (TKR). Surgeons can choose to kinematically substitute the PCL with a Posterior Stabilized (PS) TKR, or alternatively utilize a Cruciate Retaining (CR), also known as a Minimally Stabilized (MS) TKR. Proponents of PS TKR propose that the reported lower survivorship in registries when directly compared to MS TKR, is due to confounders such as selection bias because of the preferential usage of PS TKR in more complex or severe cases. In this study, we aimed to eliminate these possible confounders by performing an intention to treat analysis based on surgeon preference to choose either PS or MS TKR, rather than the actual prosthesis received.

Methods
Cumulative Percent Revision (CPR), Hazard Ratio (HR) and revision diagnosis data were obtained from a large national joint replacement registry from 1 September 1999 until 31 December 2014 for two cohorts of patients, those treated by high-volume MS preferring surgeons and those treated by high-volume PS preferring surgeons. All patients had a diagnosis of osteoarthritis and received fixed bearing TKA with patella resurfacing.

Results
At 13 years, the CPR of the MS preferring surgeons was 5.0%(95% CI 4.0,6.2) compared to 6.0%(95% CI 4.2,8.5) for the PS preferring surgeons. Revision risk for the PS preferring surgeons was significantly higher for all causes (HR = 1.45 (95% CI 1.30, 1.63), p< 0.001), loosening/lysis (HR = 1.93 (1.58,2.37), p<0.001) and for infection (HR = 1.51 (1.25,1.82), p<0.001). This finding was irrespective of patient age, was evident with cemented fixation and with both cross-linked and non-cross-linked polyethylene. The higher revision risk was only evident in males.

Conclusions
There is a 45% higher risk of revision for the patients of surgeons who prefer PS TKR compared to the patients of surgeons who prefer MS TKR.

Level of Evidence: II