The Failure and Subsidence of Total Ankle Replacements: A Comparative, Systematic Review between Metal and Ceramic Prostheses

Chayanin Angthong, M.D.
Department of Orthopaedics
Faculty of Medicine,
Thammasat University
Pathum Thani, Thailand
chatthara@yahoo.com
The Failure and Subsidence of Total Ankle Replacements: A Comparative, Systematic Review between Metal and Ceramic Prostheses

Chayanin Angthong, M.D.

My disclosure is in the Final AOFAS Mobile App.

I have a potential conflict with this presentation due to: financial support from Phoenix company, and SCom company (Thailand) to attend the meetings.
The purpose of this study is to report and compare the cumulative, intermediate-term outcomes in terms of the failure, radiolucency and talar subsidence rates for Asian patients who have been managed with metal and ceramic prostheses (which were implanted in Asia only) in total ankle replacements.
We conducted a systematic search for relevant articles (in Asian population) that had been published in English and other languages between the periods of January, 1990 to February, 2012. Studies published prior to 1990 and procedures that had used outdated prosthesis designs, that were implanted prior to the early 1980s, were excluded. Eligible studies were evaluated using the Coleman Methodology Score and all data have been independently collected by three reviewers.
Results (1)

- Seven studies were deemed as qualified for analyses. These have been described as a total of 285 implants, 147 that were done with metal prostheses (112 HINTEGRA®, 35 STAR) and 138 with ceramic prostheses (125 TNK, 13 ND-Bioceram).

- Overall, the studies have shown an improvement of the clinical scores following TAR.

- The pooled mean failure rates were at 0.68% in the metal prostheses and 1.45% in the ceramic prostheses groups (p<0.001) over mean follow-up periods of 3.1 and 5.6 years.
Results (2)

- Based on the same follow-up periods, pooled mean radiolucency rates were at **1% in the metal prostheses** and **24.6% in the ceramic prostheses** groups ($p<0.001$).

- Pooled mean talar subsidence rates were at **1.7% in the metal prostheses** and **11% in the ceramic prostheses** groups ($p<0.001$).
In regard to a slightly longer follow-up time in the group that had used a ceramic prosthesis, it was shown to have a significantly higher incidence of failure, radiolucency, and subsidence rates than had been exhibited for the metal prostheses group in the intermediate-term follow-up period.
References