

## PP156 Choice Of Different Implant Combinations of Total Hip Arthroplasty For Patients With Degenerative Joint Disease

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**Introduction:** In Taiwan, people with hip osteoarthritis (OA) receive a total hip arthroplasty (THA). They can apply for National Health Insurance (NHI) coverage for metal-on-polyethylene (MoP) implant or USD1,313.2 co-pay for new bearing surface materials. This study aimed to report the number of first primary THAs, and calculate the costs of THA by different choices of prosthesis implant.

**Methods:** A retrospective cohort study of patients aged 50 years or older who had OA (as an indication for THA) from 1 January 2010 through to 31 December 2018 was established from Taiwan's NHI Claims Data. The cohort was followed-up until 31 December 2019. THA Implant combinations were defined by bearing surface

materials e.g., "ceramic-metal" into alumina or composites made from alumina and zirconia, including metal-on-polyethylene (MOP), ceramic-metal composite ceramic-on-polyethylene (c-COP), alumina ceramic-on-ceramic (a-COC), ceramic-metal composite ceramic-on-ceramic (c-COC). Since only MOP was covered by the NHI, patients who chose the COP or COC implant had to pay for additional costs. We used hospital costs comparison data to calculate the average out-of-pocket (OOP) costs for different implant combinations.

**Results:** This study comprised 23,560 patients with first primary THA over 9 years. The number of patients of first primary THA increased from 1,802 in 2010 to 3,251 in 2018. The mean age of patients at baseline was 68 years, and the majority were women (70.6%). The share of users for each THA implant type were: MOP implant (49.2%), c-COC implant, (20.8%), a-COC implant, (6.5%), and c-COP implant, 5.9%. The average OOP costs of each implant were: USD3,578.60 for c-COC (SD=381.80), USD2,073.00 for a-COC (SD=279.80), and USD2,082.1 for c-COP (SD=334.1).

**Conclusions:** Although only MOP was fully covered by NHI, only about 50% of the OA patients chose this type of implant, and 26.7 percent chose alumina and zirconia ceramic composite despite this being a much higher OOP cost. Whether choosing more expensive implants would be cost-effective for THA in Taiwan's healthcare system requires further analysis.