

Publication	Acute total hip replacement of acetabular fractures with cementless modular revision cups in patients older than 55 years: a retrospective cohort study. Rashed M, Hildebrand F, Hofmann U, Horst K, Hürtgen B, Bolierakis E, Berk T, Alabdulrahman H. Eur J Trauma Emerg Surg. 2025;51(1):362. doi: 10.1007/s00068-025-03045-9. https://pubmed.ncbi.nlm.nih.gov/41410696/ (online access)
Study	Retrospective cohort study
Implants	Patients treated with stand-alone acute THR (SA-THR group): - Modular revision cup MRS-TITAN Maximum, iliac peg 70 mm, 3 flat-head spongiosa screws 6.5 mm (PETER BREHM GmbH) - Actinia® stem (Implantcast GmbH) Patients treated with THR and ORIF in a two-stage combined procedure (CHP group): - Modular revision cup MRS-TITAN Maximum, iliac peg 70 mm, 3 flat-head spongiosa screws 6.5 mm (PETER BREHM GmbH) - Actinia® stem (Implantcast GmbH) - PRO Quadrilateral Surface Plate (Stryker GmbH & Co.KG) Patients treated with ORIF (ORIF group): - PRO Quadrilateral Surface Plate (Stryker GmbH & Co.KG) - Low-profile pelvic recon plate 3.5 mm (DePuy Synthes) - Pre-contoured plate 3.5 mm (ITS GmbH)
Patients	n=36, ≥ 55 years; female: n=13, male: n=23
Follow-up	Minimum follow-up period of 6 months
Methods	The study was conducted at a Level 1 trauma centre over a period of 5 years from April 2019 to March 2024. The aim of the study was to evaluate the clinical performance of acute THR using the cementless modular revision cup MRS-TITAN Maximum compared to ORIF in elderly patients with displaced acetabular fractures. All patients were treated by the same main senior pelvic surgeon (last author). Data were extracted from electronic medical records and radiological archives. Of a total of 186 patients with acetabular fractures, 36 patients were eligible for analysis according to the inclusion and exclusion criteria. Demographic and clinical data were systematically recorded, including age, gender and BMI. There were no relevant differences among the groups in terms of BMI, osteoporosis, ISS, LOS and TTS.

	The patients were divided into 3 groups: (1) Acute THR (SA-THR group, n=9) (2) THR/ORIF in a combined two-stage procedure (CHP group, n=7) (3) ORIF (ORIF group, n=20) The 6-months HHS served as the primary endpoint of the study. Secondary endpoints included early postoperative complications, unplanned reoperations during the follow-up period, and radiological assessment of the implant. All postoperative outcomes, including complications and functional scores, were analysed within the period of 6 months after surgery. Implant stability and component positioning were evaluated in the THR group and THR/ORIF group.
Results	Significantly better functional outcomes were observed in the SA-THR group and CHP group (mean HHS of 83 and 82) compared to the ORIF group (mean HHS of 57, $p < 0.001$). Patients in both groups with THR showed less pain, improved gait and better functional recovery. Functional activities such as climbing stairs, sitting and using socks/shoes were significantly better overall compared to the ORIF group ($p=0.159$). Unplanned reoperations occurred only in the ORIF group (n=4). No reoperation was required in the SA-THR group or the CHP group. Wound or implant-related complications and neurovascular injuries were observed more frequently after ORIF. Radiological evaluation confirmed stable implant fixation in all THR cases, with no signs of loosening or dislocation.
Key Points	Based on the study results, acute THR using the modular revision cup MRS-TITAN Maximum with an iliac peg, with or without ORIF, is a valuable addition to the range of treatments for displaced acetabular fractures in elderly patients. This treatment offers the advantage of early mobilisation and full weight-bearing with promising functional results. The results support the inclusion of acute THR into structured decision-making protocols for the management of acetabular fractures, especially for elderly patients. Further biomechanical studies and prospective clinical research are needed to comprehensively validate long-term safety, durability and clinical efficacy in larger cohorts.
Abbreviations	BMI – Body Mass Index, ISS – Injury Severity Score, HHS – Harris Hip Score, LOS – Length of Stay, ORIF – Open Reduction and Internal Fixation, THR – Total Hip Replacement, TTS – Time to Surgery