The Results: NIHR Feasibility Randomized Controlled Trial: Acetabular Fractures in Older Patients Intervention Trial (AceFIT)

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Purpose: Displaced acetabular fractures in the older patient present significant treatment challenges. There is evidence that the morbidity and mortality associated with these injuries is similar to the fractured neck of femur cohort. Despite growing literature in this patient population, there remains significant controversy regarding treatment algorithms, varying between conservative management, to fracture fixation, and finally «fix and replace» surgical strategies to allow immediate full weight bearing.

Methods: £250,000 National Health Service funding was secured from the National Institute for Health Research (NIHR), Research for Patient Benefit and trial ethical approval granted from East of England Research Ethics Committee. After national consultation, 3 trial arms were included: conservative management, fracture fixation, and simultaneous fracture fixation with total hip arthroplasty (THA). Statistical analysis required a minimum 12 patients in each of the 3 arms to show feasibility, with an optimum trial recruitment of 20 in each arm. Inclusion criteria included patients >60 years with a displaced acetabular fracture with the following exclusion criteria: open fracture, THA in situ, preinjury immobility, and/or polytrauma. Primary outcome measure was ability to recruit with EuroQol 5 Dimensions 5-level (EQ-5D-5L) at 6 months. Secondary outcome measures at 9 months included Oxford Hip Score; Disability Rating Index; radiographic evaluation; perioperative physiological variables including surgery duration, blood loss, and complications; and health economics.

Results: 11 UK Level I major trauma centers were enrolled into the trial, which commenced in a staged manner from December 2017. Failure of surgical equipoise was identified as an issue regarding recruitment. Full trial recruitment (60 patients) was achieved with 333 patients screened. 66% of patients recruited were male, median age 76 years (range, 63-93), median body mass index 25 kg/m2 (range, 18-37), 87% patients had full mental capacity, and 77% were admitted from own home. 75% of injuries were due to a fall from standing height. 60% of fractures were classified anterior column posterior hemi-transverse. Trial feasibility was confirmed with full data acquisition completed in December 2020. Presented data will show (9-month study period) secondary outcome measures that are statistically significant in improvement from baseline for only the fix and replace arm, with acceptable low complication rates. Issues are highlighted with conservative management in this patient cohort.

Conclusion: This unique randomized controlled trial (RCT) feasibility study represents the first opportunity to understand the intricacies of each of these agreed treatment modalities, including patient-reported outcomes and health economics. The primary outcome measure has shown feasibility for a fully powered RCT. This RCT will provide clinicians with information on how best to provide a holistic management strategy for this medically complex patient cohort.