A Trial of Fracture Fixation in the Operative Management of Hip Fractures

Fixation using Alternative Implants for the Treatment of Hip fractures (F.A.I.T.H) Investigators*

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ABSTRACT

Background

Reoperation rates are high after surgery for hip fractures. We investigated the effect of a sliding hip screw versus cancellous screws on the risk of reoperation and other key outcomes.

Methods

For this international, multicentre, allocation concealed randomised controlled trial, we enrolled patients aged 50 years or older with a low-energy hip fracture requiring fracture fixation from 81 clinical centres in eight countries. Patients were assigned by minimisation with a centralised computer system to receive a single large-diameter screw with a side-plate (sliding hip screw) or the present standard of care, multiple small-diameter cancellous screws. Surgeons and patients were not blinded but the data analyst, while doing the analyses, remained blinded to treatment groups. The primary outcome was hip reoperation within 24 months after initial surgery to promote fracture healing, relieve pain, treat infection, or improve function. Analyses followed the intention- to-treat principle. This study was registered with ClinicalTrials.gov, number NCT00761813.

Findings

Between March 3, 2008, and March 31, 2014, we randomly assigned 1108 patients to receive a sliding hip screw (n=557) or cancellous screws (n=551). Reoperations within 24 months did not differ by type of surgical fixation in those included in the primary analysis: 107 (20%) of 542 patients in the sliding hip screw group versus 117 (22%) of 537 patients in the cancellous screws group (hazard ratio [HR] 0·83, 95% CI 0·63–1·09; p=0·18). Avascular necrosis was more common in the sliding hip screw group than in the cancellous screws group (50 patients [9%] vs 28 patients [5%]; HR 1·91, 1·06–3·44; p=0·03. However, no significant difference was found between the number of medically related adverse events between groups (p=0·82; appendix); these events included pulmonary embolism (two patients [<1%] vs four [1%] patients; p=0·41) and sepsis (seven [1%] vs six [1%]; p=0·79).

Interpretation

In terms of reoperation rates the sliding hip screw shows no advantage, but some groups of patients (smokers and those with displaced or base of neck fractures) might do better with a sliding hip screw than with cancellous screws.

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