Medium term Survivorship of Cannulated Hip screw fixation for undisplaced intracapsular fractures in patients over 60 years old with minimum 5 year follow-up.

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Background:

In UK, around 76,000 hip fractures occur per year with undisplaced intra-capsular fractures representing 10-15%. Treatment options include fixation either with cannulated screws, sliding compression screw or replacement of femoral head with arthroplasty. However, there is currently considerable debate among clinicians as to whether internal fixation is the most appropriate treatment for undisplaced fracture for elderly osteoporotic patients.

Objectives:

Survivorship analysis for patients' ≥ 60 years old with undisplaced intra-capsular fractures who had fixation with cannulated screws.

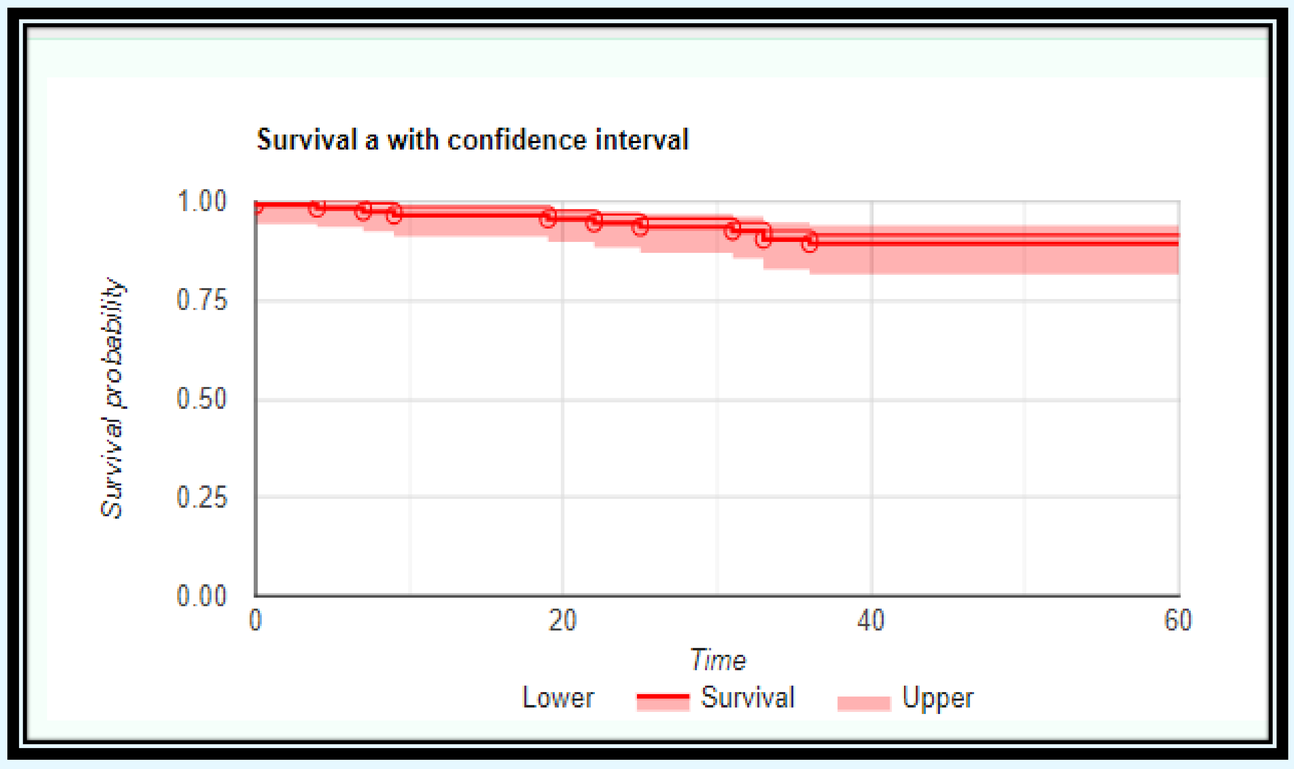
Methods:

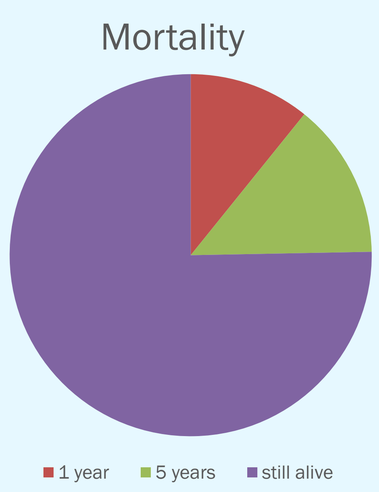
Retrospective data collection from major trauma hospital for all patients ≥ 60 years old whom had internal fixation with cannulated screws for Garden grade: 1, 2 hip fractures from March 2013 to March 2016. All consecutive cases were included. The primary outcome measures were further same side hip surgery. Descriptive statistics were used to summarize the data and Kaplan-Meier estimates calculated for the cumulative implant survival.

Results:

Out of a total of 791 intra-capsular hip fractures treated in our unit over the study period, 121 Cannulated screws operations (15.1%) were performed for 119 patients. Mean age 79.6 (9.3 SD). Mean follow up was 6.3 years (Range 5-8). 27 fractures were classified as Garden 1 and 94 as garden 2. There were 20 males and 99 females. Four patients were lost to follow up after 1 year. 10 patients (8.2%) had subsequent hip surgery, 5 of them (5%) revision to THR, 1 (0.8%) revision to hemiarthroplasty, 3 (2.5%) removal of screws, 1 (0.8%) had washout due to prolonged wound leakage. 30 patients (25.4%) died within five years of the hip fixation. There was no Mortality at thirty days. One year Mortality was 10.8% (13 patients). Five year mortality was 13.9% (17 Patients). None of the deaths were related to the operation / second operation. Kaplan-Meier estimates showed 96.6% 1 year survival and 89.4% survivorship of cannulated screw fixation at five years. (95% confidence interval (CI) 81.6% to 95.4%)

5 years survival ship (95% CI):





Conclusions:

This study shows that Cannulated hip screw fixation for undisplaced intra-capsular fracture has excellent implant survivorship at five years with low revision rate for patients ≥ 60 years old. We recommend cannulated screws as a reliable treatment with a low complication and revision rate for Garden 1, 2 fracture for this age group and surgeons can be comfortable considering fixation rather than perform arthroplasty.

Limitations:

1. Median follow-up was short, 5.1 years.
2. Not compared with Hemi/ THR data.
3. No functional outcome, nor residence status.

References:

1) NICE Guidelines CG124 2017:
Overview | Hip fracture: management | Guidance | NICE
2) Richards, John T et al. "Internal Fixation Versus Arthroplasty for the Treatment of Nondisplaced Femoral Neck Fractures in the Elderly: A Systematic Review and Meta-Analysis." *Journal of orthopaedic trauma* vol. 34,1 (2020): 42-48. doi:10.1097/BOT.0000000000001656