

### Short Versus Long InterTAN Fixation for Geriatric Intertrochanteric Hip Fractures: A Prospective, Multicentre Head-to-Head Comparison

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**Purpose:** The benefit of using a long intramedullary device for the treatment of geriatric intertrochanteric hip fractures is unknown. The InterTAN device (Smith & Nephew, Memphis TN) is offered in either short (180-200 mm) or long (260-460 mm) constructs and was designed to provide stable compression across primary intertrochanteric fracture fragments. The objective of our study was to determine whether short InterTANs are equivalent to long InterTANs in terms of functional and adverse outcomes for the treatment of geriatric intertrochanteric hip fractures.

**Methods:** 108 patients with OTA classification 31A-1 and 31A-2 intertrochanteric hip fractures were included in our study and prospectively followed at one of 4 Canadian Level-I trauma Centers. Primary outcomes included the Functional Independence Measure (FIM) and the Timed Up and Go (TUG). Secondary measures included blood loss, length of procedure, length of stay, and adverse events. Outcome parameters were captured preinjury through recall and at regular intervals postoperatively out to 12 months.

**Results:** Our study included 71 short InterTAN and 37 long InterTAN patients with 31A-1 and 31A-2 intertrochanteric hip fractures. Age, sex, body mass index, side, living status, and comorbidities were similar between the 2 groups. Mean operative time was significantly lower in the short InterTAN group (61 minutes) as compared to the long InterTAN group (71 minutes) ( $P < 0.05$ ). Functionally, the TUG was significantly ( $P < 0.05$ ) shorter in the long InterTAN group despite having similar FIM total scores at 1 year. Pre- and post-operative hemoglobin values and transfusion rates were similar for the 2 groups. Average length of stay was 16.2 days for the long InterTAN group and 19.9 days for the short InterTAN group ( $P > 0.05$ ). There were 5 periprosthetic femur fractures in the short InterTAN group versus 1 in the long InterTAN group. Nonmechanical adverse complications had similar incidence rates between the 2 InterTAN groups.

**Conclusion:** Short and long InterTAN patients displayed similar improvements in function following hip fracture fixation over a 12-month period. Operative times for short InterTAN fixation were significantly shorter than long InterTAN patients. A significantly higher proportion of short InterTAN patients sustained periprosthetic femur fractures within a year of implantation as compared to the long InterTAN group.