## Dilemma in fixing femur neck fracture – Is there any difference in neck shortening between Femoral Neck System and Multiple Cannulated Screws? - A Pragmatic, Single-Center, Prospective Randomized Controlled Trial

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Fracture union after osteosynthesis of Fracture neck femur (FNF) take place by compression of the fracture ends and possible neck shortening. Compromised functional outcome may be seen due to femoral neck shortening. The implant of choice for femoral neck fracture fixation is one of the most challenging management controversies. Study compares femoral neck shortening after internal fixation of FNFs with FNS (Femoral Neck System) or MCS (Multiple Cannulated Cancellous Screws).

METHODS:

It is a Prospective parallel interventional non-inferiority single-blinded single-center randomized controlled trial conducted in the setting of University teaching hospital. 60 patients between 18 and 60 years age, undergoing internal fixation for sub-capital or trans-cervical FNFs were randomized and allocated 1:1, into one of the two groups - the Test group (Group FNS) and the Control group (Group MCS). Primary outcome was determined by measuring one-year femoral neck shortening difference on radiographs between FNS and MCS. Secondary aim was to correlate neck shortening with PROMs in the form of modified Harris hip score (HHS) and Patient-Reported Outcomes Measurement Information System (PROMIS) Physical Function (PF) at the end of final follow-up. RESULTS:

At the final follow-up, femoral neck shortening, was  $3.77 \pm 1.87$  mm in group FNS which was significantly lower than in the control group MCS,  $6.53 \pm 1.59$  mm.

## DISCUSSION AND CONCLUSION:

FNS had significantly lower femur neck shortening than the MCS group. There was no statistically significant difference in PROMs at one-year follow-up. Study suggests that FNS can be a rational alternative for internal fixation in young adults

