## Does Augmentation with MIIG in Femoral Head Reduces the Lag Screw Penetration Rate in Pertrochanter Fracture? P-163

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**Introduction:** As we known, the most common complication of operation for pertrochanter fracture is lag screw cut out, which was seen both in IM nail system or DHS system. The cut out rate was related to the position of the lag screw and the degree of osteoporosis. The lag screw position is a correctable factor, however, the osteoporosis condition is not correctable and not preventable during the procedure. In this study, we had use MIIG augmentation in the femoral head region to enforce the bone quality and strength around the lag screw. In our hypothesis, the augmentation procedure could reduce the lag screw cut out rate and reduce the complication after the operation.
**Materials and Methods:** From Jan, 2009 to Jan 2013, we had retrospectively reviewed 59 patients in our hospital, who had received operation for pertrochanter fracture. There are 20 patients who had accepted MIIG augmentation, and 39 patients without MIIG augmentation. The MIIG was augmented in the tract and head of the proximal femur before implant application. All the patients were followed up through medical records and x ray for at least 10 month.
**Results:** In the MIIG augmentation group, there are 19 CHS and 1 Gamma nail. In the non MIIG augmentation groups, there are 24 cases with CHS and 5 cases with Gamma nail and 10 patients with PFNA II. No lag screw cut out was noted in the MIIG augmentation group. There are 4 cases (6.7%) with lag screw cut out in the non-MIIG augmentation group. There are no differences in the Tip-Apex Distance, age between the 2 groups.
**Discussion:** MIIG is a kind of calcium sulfate used in the fracture. Compared to cement, the MIIG had advantage of resortable, and osteoconductive effect. The MIIG is easier to apply than cement. MIIG augmentation in the area could enforce the osteoporosis bone and could prevent lag screw penetration. In the study, no significant difference was noted between the 2 groups, but this was because of the fewer case number of the study. There is a trend to reduce the lag screw cut out rate in the MIIG augmentation groups.
**Conclusions:** The results of this study suggest that MIIG augmentation could reduce the lag screw cut out rate in the pertrochanter fracture.

## Excess Mortality of Hip Fx P-164

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**Introduction:** The high mortality of hip fracture patients is well documented, but it is unclear how long the effect last. We designed a study to (1) investigate the excess mortality after hip fractures, for short-term and long-term follow-up (2) assess the impact of hip fracture on excess mortality and (3) estimate the population attributable risk proportion (PAR) of hip fractures.
**Materials and Methods:** There were 216 elder patients presented to NTUH with hip fracture after a low energy trauma. The control group included 215 age and sex-matched patients from Geriatric Department. All 63 covariates including body height, weight, BMI, BMD, coordination function, ADL and comorbidities associated with mortality were analyzed with COX regression model. We used National Death Registry database to follow the survival status of the subjects for 60 months.
**Results:** There was an increased mortality rate of the hip fracture cases in the first year after hip fracture compared with controls (Multivariable adjusted odds ratio {OR}: 2.4; 95% CI 1.05-5.4; PAR: 44.7%). The excess mortality of hip fracture remained high even after the first year (OR: 2.7; 95% CI 1.3-5.5; PAR: 48.0%). Risk factors for short-term mortality are betel nut chewing, comorbidities, and MMSE lower then 19. Risk factors for long-term mortality are hip fracture, ADL dependent, smoking, coordination abnormality, comorbidities, T-score lower then -2.19, BMI lower then 20.
**Discussion:** Excess mortality after hip fracture lasts even after 5 years follow-up. After frailty before fracture taken into account adequately, hip fractures attribute to higher mortality rate. The PAR of excess mortality of hip fracture were 44.7% for short-term and 48.0% for long-term follow-up.