**Title:** Risk andImpact of Bone Fracture on an End Stage Renal Failure Cohort

**Introduction:** Incidence of fracture in patients with end stage renal failure is up to 4 times that of the general population and fracture related mortality has been quoted at 2.5 times the general population. Risk factors are abundant in these patients, but different studies show varying degrees of contribution from abnormal bone biochemistry.

**Objectives:** We identified the risk factors and impact of bone fractures on mortality and hospitalisation in our end stage renal failure cohort.Using the results of this, we have compiled a risk assessment pathway to trigger specific short and long-term prevention strategies in our cohort.

**Methods:** All CKD stage 5, renal replacement therapy and renal transplant patients from our Trust who had a fracture over a 16 month period in 2016-2017 were included in our study. Data on fracture cause, risk factors and outcomes were collected using our Trust electronic patient record and patient notes. Outcomes were determined by analysing our cohort using descriptive statistics.

**Results:** 32 patients had a fracture over a 16 month period. 17/32 died (53.1% mortality). 62.5% were female and median age was 72. Most common fracture type was neck of femur (46.9%) followed by pubic rami (18.8%). 78.1% were on haemodialysis, 12.5% had a renal transplant, 6.3% were pre-dialysis and 3.1% were on peritoneal dialysis. 65.6% of patients had ≥ 5 falls risk factors. Cause of fall was mechanical in 71.9% and haemodynamic related in 15.6%. 12.5% of fractures were pathological. 36.8% of fracture patients had a PTH out with their target range. Median length of hospital stay was 16 days. Cause of death was RRT withdrawal in 33%, unknown in 33%, sepsis in 26.7% and heart failure in 6.7%. 80% of patients died in an acute hospital bed and median time of death after fracture was 32 days.

**Conclusion:** Mortality following fracture at one year in our cohort was almost double that of non-renal replacement therapy patients and duration of hospital stay was over 3 times longer than the national average. Based on these results, preventing hypotensive falls alone could save up to 98 bed days/year in our cohort region. Specialised fracture risk prediction and prevention in those with end stage renal failure is necessary to address this significant problem.