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Denosumab for Osteoporosis Treatment in Hemodialysis Patients : A Single-Center Experience

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Objectives: Chronic kidney disease exacerbates osteoporosis and the rate of fracture in ESRD (end-stage renal disease) patients is reported to be up to 17-fold higher than that of the general population. However, the treatment of osteoporosis in ESRD is complicated and not established due to different bone-mineral physiology from the general population. In this single center experience, we share our treatment experience of denosumab treatment in ESRD for 6 months period.

Methods: We retrospectively reviewed the denosumab-treated ESRD osteoporosis patients of MH Yeonse Hospital from January 2018 to July 2018. Anti-osteoporotic drugs (estrogens, selective estrogen receptor modulators, bisphosphonates, parathyroid hormones) naïve patients who started denosumab in January 2018 were analyzed.

Results: Forty patients started denosumab and data of 37 patients who keep followed the clinic for 6 months were included in the analysis. Hypocalcemia occurred approximately 5 days after the first injection and reached the nadir in the first 10 days up to 1 month. After 4 months, serum calcium level reached to baseline levels. Serum phosphorus level decreased for the first two months and returned to baseline levels. Intact- parathyroid hormone (I-PTH) levels were 220 pg/mL at the baseline and increased to over 1000 pg/mL after 3 months and decreased to 600 pg/mL after 6 months.

Conclusions: Hypocalcemia, hypophosphatemia and I-PTH elevation were observed in the denosumab-treated ESRD osteoporosis patients. No severe symptomatic hypocalcemia was reported during the treatment period and hypocalcemia reached to baseline level after 4 months. Further data including annual bone mineral density score should be discussed in the further follow up observation.

Figure 1. Sequential Serum Calcium Changes (mg/dL)

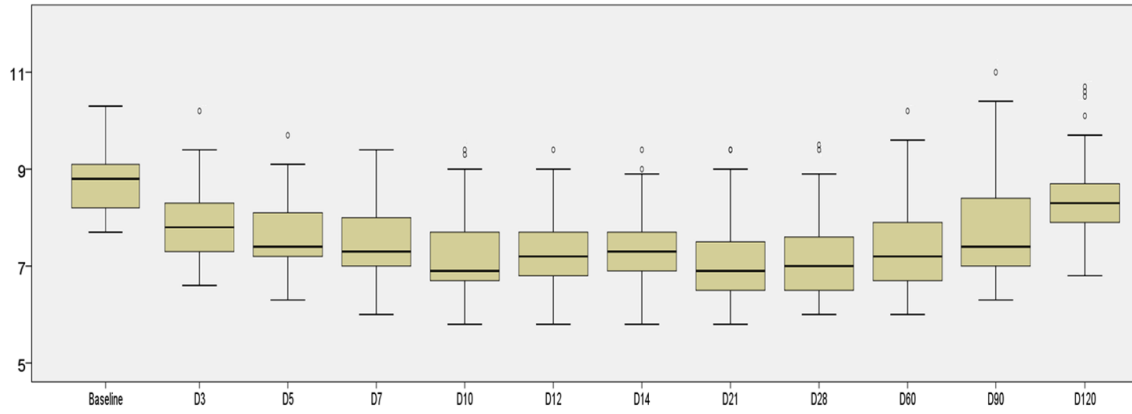


Figure 2. Sequential Serum iPTH Changes (pg/mL)

