

## Impact of directly observed treatment of one-alfacalcidol on mineral bone disorder profile in dialysis patients- A single unit pilot study

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### Abstract

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### Background and Aims:

Secondary hyperparathyroidism (SHPT) is a common mineral bone disorder observed in patients with end-stage renal disease. Management of SHPT can be challenging mainly due to poor medication compliance. Directly observed treatment (DOT) has shown to improve management outcomes in other conditions like tuberculosis. We conducted a pilot study to investigate the impact of DOT with one alfacalcidol for SHPT in our cohort of dialysis patients.

### Method:

This prospective observational study was conducted on 21 end stage renal disease patients on dialysis from a single centre who were commenced on one alfacalcidol on dialysis days under direct observation .All patients had not shown any improvement in PTH despite increase in one alfacalcidol either admitted to or were suspected to have medication non-adherence. Serum bone mineral profile including parathormone (PTH), corrected calcium, phosphate and alkaline phosphatase were recorded before and after initiation of DOT. Treatment outcome was measured by comparing the mean change in the biochemical profile prior DOT initiation and at the lowest PTH value achieved on DOT. Data was analysed by paired t test using SPSS software.

### Results:

The mean age of our sample at the time of commencing DOT therapy was 52 years. Our sample had a predominance of males (67%) and Asian ethnicity (62%). 71% had a history of hypertension and 43% were diabetic. DOT one alfacalcidol therapy produced a significant reduction in the mean PTH value (pre-DOT- 92.2 vs post DOT-36.1 pmol/L,  $p<0.001$ ). There was a significant rise in the corresponding mean corrected calcium levels (pre-DOT- 2.22 vs post-DOT-2.45 mmol/L,  $p=0.001$ ) (table-1). Over a mean follow up of 8 months, a significant reduction in the one alfacalcidol dose requirement was observed in 52.38% of our cohort.

### Conclusion:

DOT one alfacalcidol therapy produced a significant improvement in the mineral bone profile in our cohort of dialysis patients. DOT approach can help to improve the outcomes in dialysis patients with poor compliance.