

## **Tc-99m-HMDP bone uptake quantification and plasma osteocalcin levels in hemodialysis patients—a preliminary study**

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In this preliminary study plasma osteocalcin levels and Tc-99m-HMDP (Technetium 99m hydroxymethylene diphosphonate) bone uptake (BU) were measured in 10 chronic end-stage renal failure patients who were on maintenance hemodialysis. The aim of this study was to determine the correlation between bone uptake and osteocalcin—a sensitive and specific marker of osteoblastic activity. There was a statistically significant increase in both 20 and 180 minute uptake in the patient group ( $36 \pm 2.7$  and  $39 \pm 3.6$ ) when compared to the normal volunteers ( $32 \pm 3.1$  and  $19 \pm 2.7$ ). Plasma osteocalcin levels were also significantly high ( $24.5 \pm 5.6$  ng/ml) when compared with normal values ( $6.5 \pm 2.3$  ng/ml). The correlations between osteocalcin and 20 and 180 min BU were high ( $r=0.62$  and  $0.72$  respectively). In conclusion, our preliminary study suggests that, in hemodialysis patients, Tc-99m-HMDP bone uptake quantification is a sensitive and non-invasive method for showing increased osteoblastic activity.

**Key words:** osteocalcin, Tc-99m-HMDP bone uptake, hemodialysis patients