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## Variability of Serum Concentration of Calcium, Phosphate and Parathyroid Hormone Depending on Time of Blood Draw for Patients on Nocturnal Home Hemodialysis

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### ABSTRACT

Background: Guidelines for patients treated with conventional hemodialysis patients have been written for target serum levels for calcium (Ca), phosphate ( $PO_4$ ) and intact parathyroid hormone (iPTH). No guidelines exist for nocturnal home hemodialysis (NHH) patients for target values or timing of the blood sample draw. We undertook a prospective cohort study to examine the variability in pre, post and clinic (post-post) serum values for Ca,  $PO_4$ , and iPTH in NHH patients to determine if timing of blood draw could affect clinical decisions. Methods: Twenty prevalent NHH patients collected blood pre and post their usual NHH session with an additional blood sample drawn in clinic (post-post). Median and interquartile range of pre, post and clinic (post-post) values of iPTH,  $PO_4$  and Ca were calculated and compared with Friedman/Wilcoxon test. Serum concentrations were also categorized according to Canadian Society of Nephrology (CSN) guidelines target values for pre and clinic (post-post) samples. The proportion of patients that would be categorized differently by clinic (post-post) samples was determined. Results: There was a significant difference between pre-serum values compared to post and clinic (post-post) values. Overall, iPTH,  $PO_4$  and Ca values would be misclassified in 25%, 70% and 50% respectively if blood was drawn at the clinic visit (post-post) compared to pre-HD as per CSN guidelines. Conclusions: Although no specific guideline has been written for NHH patients, to ensure consistency of management compared to in-centre HD patients, lab values should be drawn pre-HD until clinical evidence suggests that the recommendations should be different for NHH.

### KEYWORDS

Nocturnal Hemodialysis; Calcium; Phosphate; Parathyroid Hormone

### Cite this paper

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