Magnesium and parathyroid hormone among end-stage renal disease patients

Seyed Seifollah Beladi Mousavi, Fatemeh Hayati, Shokouh Shayanpour, Shahla Ahmadi Halili

Dear Editor

With great interest, we read the recently published article entitled “serum magnesium in association with parathyroid hormone levels in routine hemodialysis patients” by Fooladgar and colleagues in Journal of Parathyroid Disease (1). They evaluated, in a cross-sectional study, the serum levels of magnesium (Mg), calcium, phosphorus and intact PTH (iPTH) among 56 end-stage renal disease (ESRD) patients undergoing maintenance hemodialysis (HD) in a HD center (1).

The results of the study showed a significantly positive correlation between iPTH and serum Mg levels among these patients (1).

Hypermagnesemia is an uncommon laboratory finding among healthy adults and symptomatic hypermagnesemia is a rare disorder among patients with normal renal function, because the normal kidney is able to rapidly excrete magnesium loading by reducing magnesium tubular reabsorption (2,3).

Hypermagnesemia is also not a prominent feature among patients with chronic kidney disease (CKD), in the absence of increased magnesium administration, however renal failure mostly at its final stages is most common cause of hypermagnesemia (4).

The relationship between iPTH and serum Mg levels in healthy adults and CKD patients, the effect of hypermagnesemia on disorders of mineral and bone metabolism, and the effect of chronic hypermagnesemia on PTH levels among ESRD patients as evaluated by Fooladgar et al are important issues (1,4-7).

The results of the study by Fooladgar et al showed a positive relationship between iPTH and serum Mg levels among HD patients, however most of other studies in HD patients and also most of studies among ESRD patients undergoing peritoneal dialysis showed a significant inverse relationship between serum Mg and serum intact PTH levels (1,8,9).

Therefore, as Fooladgar et al recommended, there still remains a number of big questions about this issue and it is necessary to further evaluate of role of Mg in secondary hyperparathyroidism and vascular calcification. Therefore, further clinical studies and multi-centric investigation are necessary (1).

Authors’ contribution
SAH and FH prepared the primary draft. SBM prepared the final paper. All authors read and signed the edited manuscript.

Conflicts of interest
The authors declare that, they have no conflict of interests.

Ethical considerations
Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

Implication for health policy/practice/research/medical education
Hypermagnesemia is also not a prominent feature among patients with chronic kidney disease, in the absence of increased magnesium administration, however renal failure mostly at its final stages is most common cause of hypermagnesemia.

Keywords: Magnesium, Parathyroid hormone, Chronic kidney disease, End-stage renal disease
authors.

**Funding/Support**
None.

**References**


Copyright © 2018 The Author(s); Published by Nickan Research Institute. This is an open-access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.