



Association of serum magnesium with vitamin D level in normal and renal disease patients

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Recently, much attention had been directed toward the association of serum magnesium and vitamin D level in general population and renal failure patients. Recently Kelishadi *et al.* conducted a study to test the correlation of serum magnesium with serum vitamin D (25(OH)D) level in 330 students, aged range from 10 to 18 years (1). In this investigation, they observed the significant correlation of serum magnesium with 25(OH)D serum level. They recommended further investigations to find the underlying mechanisms and the clinical significance of the current findings (1). In a cross-sectional study on 41 patients of end-stage kidney failure on maintenance hemodialysis, we observed a significant positive association of serum magnesium level with 25OH vitamin D ($r=0.40$, $p=0.009$). This significant association was strongly positive in diabetic and nondiabetic patients, individually for both female and male groups (2). Likewise, Gandhe *et al.*, carried out a study to test the probable correlation of vitamin D3, and magnesium level in type 2 diabetes mellitus (DM) individuals. They firstly found low magnesium levels in type 2 DM patients, as compared to healthy controls. Secondly, they found a positive correlation of vitamin D with magnesium level ($r=0.92$, $p<0.01$). They interpreted that, vitamin D level can also influence the magnesium status. They additionally found the negative association of magnesium with insulin resistance (3). Thus, hypomagnesemia may leads to an increased insulin resistance and also established the fact that, low magnesium status influences glucose metabolism, too (3-7). Fibroblast growth factor-23 is associated with atherosclerosis and cardiovascular mortality in chronic renal failure patients and healthy individuals (8-11). It was found that, magnesium deficiency increases serum fibroblast growth factor 23(FGF23) level as well (12). Thus, the positive association of magnesium deficiency and FGF23 increase (1,12-17), further explain the significance of magnesium deficiency and vitamin D,

■ Implication for health policy/practice/research/medical education

Association of serum magnesium with vitamin D is especially important in the pediatric group and implies to further pay attention to reach the micronutrients to the pediatric individuals, as a possible prevention of progression of kidney disease in this population.

while vitamin D has a role in magnesium metabolism, too. Association of serum magnesium with vitamin D is especially important in the pediatric group that observed by Kelishadi *et al.*, (1) and implies to further pay attention to reach the micronutrients to the pediatric individuals, as a possible prevention of progression of kidney disease in this population.

Authors' contributions

All authors contributed to the paper equally.

Conflict of interests

The authors declared no competing interests.

Ethical considerations

Ethical issues (including plagiarism, misconduct, data fabrication, falsification, double publication or submission, redundancy) have been completely observed by the authors.

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