

## Re: Association Between 25-Hydroxyvitamin D Level and Inflammatory and Nutritional Factors in Hemodialysis and Peritoneal dialysis Patients in Qom, Iran

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### Dear Editor,

We have recently read with interest the article entitled "Association Between 25-Hydroxyvitamin D Level and Inflammatory and Nutritional Factors in Hemodialysis and Peritoneal dialysis Patients in Qom, Iran" that published in your esteemed journal.<sup>1</sup> In this article, Mirchi and colleagues evaluated the role of inadequate serum level of 25-hydroxyvitamin D and found the significant relationship between 25-hydroxyvitamin D and high-sensitivity C-reactive protein, and neutrophil-lymphocyte ratio.

The role of supplements in chronic kidney disease (CKD) has been investigated in some previous studies. Many studies expressed the beneficial role of vitamin C supplement in CKD patients.<sup>2,3</sup> We also studied the effect of vitamin C supplement on C-reactive protein, and there was a significant reduction of C-reactive protein in the patients who received vitamin C for 2 months.<sup>4</sup> Moreover, there were some positive results with vitamin B group and vitamin E-coated dialyzer in some studies<sup>5,6</sup>; however, there was no considerable effect for vitamins K and A.

Vitamin D is one of the important endocrine supplements especially in patients with end-stage renal disease, the serum level of which varies in different geographic areas, diets, sexes, and medical conditions.<sup>7</sup> Many studies have been done about vitamin D in normal population around the world, including Iran.

Faghih and colleagues reported a vitamin D level; of  $49.29 \pm 12.87$  nmol/L in men and  $27.46 \pm 10.37$  nmol/L in women in Shiraz,<sup>8</sup> and Ebrahimi and coworkers reported  $14.7 \pm 9.4$  nmol/L in adolescents in Shahroud.<sup>9</sup> Furthermore, some studies reported various mean levels of vitamin D in various ranges of age.<sup>10</sup> Also another study found the mean serum level of 25-OH vitamin D was 37.29 ng/mL in men and 16.76 ng/mL in women ( $P < .001$ ) in Isfahan.<sup>11</sup>

It seems that the variety in results could be due to different sunlight exposure, diet, sexes, supplement use, and geographic area.<sup>7</sup>

Also, Mirchi and colleagues in this study reported the level of vitamin D in hemodialysis and peritoneal dialysis patients that did not receive vitamin D and reported 7.4% and 3.1% normal, 26.7% and 9.1% insufficiency, 65.8% and 87.6% deficiency, and 17.6% and 50.0% severe deficiency, respectively.<sup>1</sup> It could be better if there was a control group in the patients that received vitamin D in the last 3 months for to compare in both groups and matching in the confounding factors.

In the case of vitamin D and its anti-inflammatory effects, some previous studies were against the beneficial role of the vitamin D administration in CKD patients.<sup>12</sup> However, the majority of recent studies expressed some positive effects for vitamin D, including reduction of mortality, relative risk of the death, cardiovascular events, fibrosis, general and renal inflammation, apoptosis, and proteinuria in the CKD patients.<sup>13-15</sup> In addition, Panichi and associates illustrated the role of vitamin D administration to reduce the inflammatory cells infiltration in the glomerulonephritis in the animal models that could reinforce this theory that vitamin D is useful in the inflammation relief.<sup>16</sup> Moreover, the role of vitamin D in kidney transplantation outcome has been mentioned in some studies.<sup>17</sup>

Finally, it seems that further randomized clinical trials still need to investigate the anti-inflammatory role of vitamin D in CKD patients and answer this question: "Should the physicians prescribe vitamin D for CKD patients or not?"

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## REFERENCES

1. Mirchi E, Saghafi H, Gharehbeiglou M, Aghaali M, Rezaian Z, Ghaviahd M. Association Between 25-Hydroxyvitamin D Level and Inflammatory and Nutritional Factors in Hemodialysis and Peritoneal dialysis Patients in Qom, Iran. *Iran J Kidney Dis.* 2016;10:205-12.
2. Deved V, Poyah P, James MT, et al. Ascorbic Acid for Anemia Management in Hemodialysis Patients: A Systematic Review and Meta-analysis. *American Journal of Kidney Diseases.* 54:1089-97.
3. Biniiaz V, Tayebi A, Ebadi A, Sadeghi Shermeh M, Einollahi B. Effect of vitamin C supplementation on serum uric acid in patients undergoing hemodialysis: a randomized controlled trial. *Iran J Kidney Dis.* 2014;8:401-7.
4. Biniiaz V, Sadeghi Shermeh M, Ebadi A, Tayebi A, Einollahi B. Effect of Vitamin C Supplementation on C-reactive Protein Levels in Patients Undergoing Hemodialysis: A Randomized, Double Blind, Placebo-Controlled Study. *Nephrourol Mon.* 2014;6:e13351.
5. Tayebi A, Biniiaz V, Savari S, et al. Effect of Vitamin B12 supplementation on serum homocysteine in patients undergoing hemodialysis: A randomized controlled trial. *Saudi J Kidney Dis Transpl.* 2016;27:256-62.
6. Takouli L, Hadjiyannakos D, Metaxaki P, et al. Vitamin E-coated cellulose acetate dialysis membrane: long-term effect on inflammation and oxidative stress. *Ren Fail.* 2010;32:287-93.
7. Rosen CJ. Clinical practice. Vitamin D insufficiency. *N Engl J Med.* 2011;364:248-54.
8. Faghih S, Abdolazadeh M, Mohammadi M, Hasanzadeh J. Prevalence of vitamin d deficiency and its related factors among university students in shiraz, iran. *Int J Prev Med.* 2014;5:796-9.
9. Ebrahimi M, Khashayar P, Keshtkar A, et al. Prevalence of vitamin D deficiency among Iranian adolescents. *J Pediatr Endocrinol Metab.* 2014;27:595-602.
10. Hovsepian S, Amini M, Aminorroaya A, Amini P, Iraj B. Prevalence of vitamin D deficiency among adult population of Isfahan City, Iran. *J Health Popul Nutr.* 2011;29:149-55.
11. Moussavi M, Heidarpour R, Aminorroaya A, Pournaghshband Z, Amini M. Prevalence of vitamin D deficiency in Isfahani high school students in 2004. *Horm Res.* 2005;64:144-8.
12. Palmer SC, McGregor DO, Macaskill P, Craig JC, Elder GJ, Strippoli GF. Meta-analysis: vitamin D compounds in chronic kidney disease. *Ann Intern Med.* 2007;147:840-53.
13. Kim CS, Kim SW. Vitamin D and chronic kidney disease. *Korean J Intern Med.* 2014;29:416-27.
14. Duranton F, Rodriguez-Ortiz ME, Duny Y, Rodriguez M, Daures JP, Argiles A. Vitamin D treatment and mortality in chronic kidney disease: a systematic review and meta-analysis. *Am J Nephrol.* 2013;37:239-48.
15. Meireles MS, Kamimura MA, Dalboni MA, Giffoni de Carvalho JT, Aoike DT, Cuppari L. Effect of cholecalciferol on vitamin D-regulatory proteins in monocytes and on inflammatory markers in dialysis patients: A randomized controlled trial. *Clin Nutr.* 2016.
16. Panichi V, Migliori M, Taccola D, et al. Effects of 1,25(OH)2D3 in experimental mesangial proliferative nephritis in rats. *Kidney Int.* 2001;60:87-95.
17. Hesketh CC, Knoll GA, Molnar AO, Tsampalieros A, Zimmerman DL. Vitamin D and kidney transplant outcomes: a protocol for a systematic review and meta-analysis. *Syst Rev.* 2014;3:64.