Comments

Clinicians should be more prone to examine children with chronic kidney disease in terms of vitamin D deficiency

To the Editor: We read the article "Vitamin D insufficiency and deficiency in children with chronic kidney disease" written by Kari et al with interest.1 The authors concluded that vitamin D insufficiency/deficiency was more frequent in children with chronic kidney disease (CKD) than in those with normal kidney function. Thank to the authors for their contribution of a study successfully designed. We believe that these findings will guide further studies about vitamin D levels and chronic renal failure.

A previous study including 400 adult healthy subjects in Saudi Arabia reported that 98 subjects (24.5%) had insufficiency (21-29 pg/mL) and 52 subjects (13%) had deficiency (<20 pg/mL) of 25OHD levels.2 Certainly the results in adult patients may not reflect the specifications of children, but some extrapolation of data can be made. The control group of the present study had similar results. In addition to the baseline levels in a healthy population, patients with CKD are expected to have lower levels of vitamin D due to the defective enzymatic transformation.3 Thus, the results of the study are expected. As in adults, CKD is a difficult challenge in terms of follow up, treatment and complications. This study deserves emphasis in terms of underlining the condition of vitamin D deficiency particularly in children with CKD. We think that treatment of calcium, phosphorus, parathyroid hormone and vitamin D levels are only part of the whole condition and clinicians should be more prone to examine patients in detail in terms of physical and laboratory findings in the follow up of CKD patients.

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Reply

It is common practice to put patients with chronic kidney disease (CKD) on an activated form of vitamin D such as alphacalcidol without measuring or correcting the vitamin D3 level. However, in recent studies from different parts of the world, 25 (OH) D3 deficiencies were reported in both adults1 and children2 with CKD. The 2009 Kidney Disease: Improving Global Outcomes (KDIGO) clinical practice guideline on the management of CKD-MBD recommended that 25 (OH) D3 levels should be monitored and if low, ergo- or cholecalciferol supplements should be prescribed.3 We have conducted a study investigating the effect of daily oral vitamin D3 on the levels of 25(OH)D3 and iPTH in vitamin D insufficient/deficient children with CKD.4 Maintenance therapy with oral vitamin D3 (2000 IU/day for 6 months) did not result in improved iPTH levels, and only 11% of the children achieved normal 25 (OH) D3 levels (≥30 ng/mL). All the children had received alphacalcidol, the active form of vitamin D, which is recommended for use in children with CKD and high iPTH, with the aim of normalizing iPTH levels in these children. We believe that nonadherence to treatment may explain the poor response to vitamin D supplementation in our study, as there is evidence that the administration of oral vitamin D3 resulted in improved vitamin D3 levels and a reduction in iPTH.5 The observed poor response could also be attributed to the low dose of oral vitamin D that we administered to the children since the current recommendation is to use doses of 1000 IU/day for infants <1 month old, 1000 to 5000 IU/day for infants 1 to 12 months old, and >5000 IU/day for children >12 months old.6

The Cochrane reviewers found 15 randomized controlled trials comparing different interventions used to prevent or treat bone disease in children with CKD stages 2-5. They concluded that bone disease, assessed by changes in PTH levels, is improved by all vitamin D preparation.6 Shroff et al used oral vitamin D3 in vitamin D deficient or severely deficient children with CKD who had normal iPTH levels.7 They used intensive replacement treatment with ergocalciferol as per the Kidney Disease Outcomes Quality Initiative (KDOQI) clinical practice guidelines for nutrition in CKD,8 and
they found that after three months of therapy, there was a significant improvement in 25(OH)D levels in the treated group as compared with the placebo group. There was also an improvement in the levels of 1,25(OH)2D in the treated group compared with the placebo group. They concluded that ergocalciferol was effective in delaying the development of secondary hyperparathyroidism in children with CKD 2-3 who had normal iPTH.

In a recent study we tested the hypothesis that in children with high iPTH who had received alfacalcidol, CKD-MBD can be improved by normalizing vitamin D3 levels. by administration of single high dose intramuscular Vitamin D3. We found that single-dose intramuscular vitamin D3 (300 000 IU) resulted in significant improvement of vitamin D3 and iPTH levels in children with CKD which was not sustained. We concluded that high-dose intramuscular vitamin D3 is effective and safe in children with CKD, and it improves hyperparathyroidism. Vitamin D3 levels should be measured regularly even in children who had received 1,25(OH)2 vitamin D3.

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Chyluria: a mimicker of nephrotic syndrome

To the Editor: With reference to the interesting paper by Kaul et al, tuberculosis (TB) is one of the important non-parasitic causes of chyluria. TB is a common health threat in India with a prevalence of 545 per 100 000 and ranged from 201 in the highest quintile to 1100 in the lowest quintile. Kaul et al stated in their study that urine test for acid-fast bacilli (AFB) in all the studied patents was negative. However, they did not address the applied laboratory test(s) to fill that objective. This is critical as there is a substantial variation in the detection rate of AFB depending on the applied lab-

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Reply

Dr. Al-Mendalawi is right in mentioning that urine AFB is not the ideal test to justify genitourinary TB, but the idea was to look into factors attributing to misdiagnosis of nephrotic syndrome in patients with chyluria and how hazardous it can be, but the comments are well taken.

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