The use of vitamin d supplementation and risk of hypercalciuria

Health & Medicine

We found that administration of vitamin D supplements in patients who suffer from vitamin D deficiency, did not lead adversely to increased risk of hypercalciuria. In other word, administrating vitamin D supplements for three months may not influence excretion of urinary calcium in patients who suspected to renal stone disease. There are similar studies that could not demonstrate the increased risk of hypercalciuria following use of vitamin D supplements or increased serum level of vitamin D (10, 13). Leaf and colleagues (14) showed that the use of vitamin D supplement could not change the urinary level of calcium and thus could not increase the risk of renal stone formation. Similarly, as indicated by Gallagher et al (15), no relationship between hypercalciuria and vitamin D dose was found. More interestingly, episodes of hypercalciuria were either transient or recurrent. Contrary to our results, some studies have shown a significant dose dependent increase in the occurrence of nephrolithiasis by administrating vitamin D supplements. Zwart et al (16) showed that regimen containing 250 µg/week dose of vitamin D is safe. However, a regimen of four weekly followed by monthly doses of 1250 µg can raise the risk of hypercalciuria. Interestingly, some studies especially on animal models have shown that the use of vitamin D3 with calcium supplementation significantly decreased the formation of stones and caused a significant reduction in urinary calcium, suggesting a protective role for combination therapy (17).

However, in a study by Jackson and his colleagues (18), an increased risk of kidney stone following combination therapy with vitamin D plus calcium was shown. This effect might be explained by an elevated levels of urinary calcium. In fact, the effects of vitamin D supplements on the risk of

hypercalciuria still remain controversial, probably due to the differences in study protocol especially the dose and duration of vitamin D therapy in addition to intake of other sources of calcium. Altogether, this study showed that vitamin D intake with conventional dose was not significantly associated with increased risk of kidney stone, although higher risk with higher doses could not be excluded.

Our study has some limitations, including low number of the participants, short time follow up and not having the food questionnaire in order to obtain the detailed diet habits of our subjects. Therefore, to clarify the effects of vitamin D supplements on kidney stones, studies considering different doses of vitamin D administered for different durations on larger population are needed.