Should We Measure Vitamin D Level?

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Vitamin D deficiency (serum 25-hydroxyvitamin D > 10 ng per milliliter) increases the risk of bone fracture and muscle weakness. Vitamin D insufficiency is defined as a serum level of 25-hydroxyvitamin D (25[OH]D₃) of 10 to 30 ng per milliliter without obvious clinical disease.[1] During the past decade, the effects of vitamin D insufficiency have been studied in cancer, cardiovascular disease, diabetes mellitus, endocrine disorders and immune dysfunction.[1]

In the Korea National Health and Nutrition Examination Survey, the prevalence of serum 25[OH]D₃ < 20 ng per milliliter was 47.3% in males and 64.5% in females.[2] In a pilot study, vitamin D insufficiency in patients admitted to intensive care units in the Daegu metropolitan area comprised 87.8%.[3,4] Short-term and mid-term mortality rates were not associated with vitamin D levels, however.[3,4] Vitamin D plays key roles in immune regulation, infection susceptibility and progression of acute respiratory distress syndrome.[5,6] Many studies have suggested that vitamin D replacement therapy reduces mortality in various diseases. In a meta-analysis, vitamin D supplementation seemed to reduce mortality rates in elderly patients.[7] However, the methods of administering vitamin D varied and we did not find appropriate way of vitamin D therapy.

Clinical outcomes according to vitamin D level have not been determined. Beyond basic research, clinical studies using vitamin D are needed in critical and intensive care medicine. Prospective studies on vitamin D replacement in critically ill patients with vitamin D deficiency are ongoing.[8] Regular monitoring of serum 25[OH]D₃ should be considered in severely ill patients.

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