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FGF23 AS A SURROGATE MARKER FOR PARATHYROID FUNCTION IN DIALYSIS PATIENTS

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Measurement of serum PTH levels serves as an indicator of parathyroid function as well as a potential marker for bone turnover. Although the level may reflect the real activity of parathyroid cells to some extent, response to medical therapy differs in each case even in the presence of the same level of iPTH. It has only been shown that the size of the parathyroid gland can be a marker for the response to vitamin D therapy.

FGF23 is a recently discovered phosphaturic factor, which plays an important role in the pathogenesis of secondary hyperparathyroidism in CKD partly by suppressing the production of active vitamin D in the kidney. Extremely high serum levels have been reported in dialysis patients without residual renal function, however, the role of such high levels of FGF23 still remains unclear.

We have recently shown that serum FGF23 level may be a better predictor than iPTH level for future development of refractory hyperparathyroidism and for the response to intravenous vitamin D therapy. FGF23 production was confirmed in the bone, but not in the parathyroid. In another study, increase of serum FGF23 level significantly correlated with the cumulative doses of vitamin D used. Furthermore, decrease of serum phosphate level lead to reduced level of FGF23 even in dialysis patients without the main target tissue, the kidney.

Since it has recently been shown that vitamin D induces FGF23 production in osteoblasts in vivo and in vitro, very high serum levels of FGF23 in dialysis patients may be the results of previous vitamin D treatment and phosphate load.

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