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EXPERT OPINION

Comment on: Vitamin D analogs in denosumab-treated patients with kidney failure

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To the Editor

We read with interest the article "Calcitriol: a better option than vitamin D in denosumab-treated patients with kidney failure?" by Buonerba *et al.* [1]. Vitamin D3 and D2, produced by photosynthesis in the skin or ingested, are transported to the liver and metabolized to 25-hydroxyvitamin D, the major circulating form. Further hydroxylation occurs in the kidney to form the highly biologically active 1,25-dihydroxyvitamin D. As the authors note, 1-α-hydroxylation is progressively impaired in patients with a creatinine clearance < 70 ml/min. However, usually, there are no problems of availability of hepatic 25-hydroxylase and this activation is not impaired in liver disease except in very advanced stages of cirrhosis [2]. Alfacalcidol, 1-α-hydroxyvitamin D3, is another synthetic analog of vitamin D that is converted in the liver to the active metabolite 1,25-dihydroxyvitamin D. This analog has been useful in preventing bone mass loss in patients with advanced prostatic carcinoma after orchidectomy treated with complete androgenic blockade [3]. From a theoretical point of view, alfacalcidol could also be useful in denosumab-treated patients with kidney failure.

Declaration of interest

The authors have no competing interests to declare and have received no funding in preparation of the manuscript.

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Author's response

As the authors correctly state, alfacalcidol is likely to be equally effective with respect to calcitriol in reducing events of hypocalcemia in a selected population of patients receiving denosumab.

To my knowledge, hepatic hydroxylation is not regulated by serum calcium levels, so alfacalcidol should not provide any advantage over calcitriol in terms of hypercalcemia, as clinical evidence indicates [1]. An observational study with either of these agents is strongly warranted. I suggest that patients with kidney failure and severe hypocalcemia treated with denosumab and vitamin D should receive calcitriol in clinical practice.

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