Low Turnover Bone Disease in Early CKD Stages

To the Editor: We read with interest the article "Low Turnover Renal Osteodystrophy With Abnormal Bone Quality and Vascular Calcification in Patients With Mild-to-Moderate CKD" by El-Husseini *et al.*[1] On the basis of bone biopsy findings, the authors reported that low turnover bone (LTB) disease was the most prevalent pattern of renal osteodystrophy in patients with early CKD stages 2 to 3, with a prevalence of 84%. This finding is in agreement with previous reports by Coen *et al.*[2] (not mentioned) and ourselves.[3] Both reports included a larger number of predialysis patients with CKD, and we were the first a few years ago to report the predominance of LTB disease in CKD stages 2 to 3. Moreover, we would like to take issue with the authors' statement in the Discussion that Neto *et al.*[4] found a high percentage of normal bone histology in patients with CKD stages 3 to 4. They actually also reported that LTB disease was the predominant form of renal osteodystrophy in these patients. Taken together, we are pleased that El-Husseini *et al.*[1] confirm these previous reports.

Of note, Barreto *et al.*[3] reported that bone formation rate was lower in patients with CKD stages 2 to 3, as compared with patients with CKD stages 4 to 5, which may in part be due to the skeletal action of uremic toxins, inducing a resistance to the action of parathyroid hormone.[2] Together with the report by Coen *et al.*,[2] these observations led us to postulate that the bone disease pattern in CKD changes along the decline in kidney function, switching from LTB in early stages to high bone turnover in more advanced stages of CKD.[5] Excessive parathyroid hormone lowering at CKD stages 2 to 3 should be avoided because this may aggravate LTB.[5]

Finally, El-Husseini *et al.*[1] claim that Fourier transform infrared spectroscopy has added value in evaluating bone quality in LTB disease. We wonder whether the assessment of bone mineral-to-matrix ratio by infrared spectroscopy allows an accurate evaluation of bone quality and strength as bone histomorphometry in patients with CKD with LTB disease. Moreover, we question the applicability of infrared spectroscopy in clinical practice.

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Response to "Low Turnover Bone Disease in Early CKD Stages"

The Authors Reply: Barreto *et al.* wrote a letter titled, "Low Turnover Bone Disease in Early CKD Stages" in response to our manuscript, "Low Turnover Renal Osteodystrophy With Abnormal Bone Quality