## SIGNIFICANCE STATEMENT

Abnormal bone turnover of renal osteodystrophy in advanced CKD can only be diagnosed using bone biopsy (gold standard). However, this is an invasive and painful procedure, and thus, it is rarely performed. This study found that three bone biomarkers (bALP, intact PINP, and TRAP5b) and high-resolution bone imaging of distal radius can discriminate patients with low bone turnover from those with nonlow bone turnover as assessed by bone histomorphometry. Hence, the biomarkers and bone imaging may have the potential to replace bone biopsy, particularly in discriminating patients with low bone turnover. They may also be useful in selecting patients for future clinical trials that aim to reduce their fracture risk.