CKD-MBD
Chronic Kidney Disease Mineral and Bone Disorder

CKD-MBD related publications in the ERA journals
From January to June 2024

The ERA acknowledges the high clinical and scientific relevance of the CKD-MBD syndrome, reflected by several key publications in the journals of our society. We hereby summarize the content of several recent papers, providing a link to their abstracts, full texts or electronic publications (Epub) ahead of print.

From January to June 2024, 19 CKD-MBD related articles have been published, including editorial comments and E-pubs ahead of print; 6 in Nephrology Dialysis and Transplantation and 13 in the Clinical Kidney Journal.

1) The basics of **phosphate (P)** metabolism were reviewed by **C.A. Wagner et al** (Nephrol Dial Transplant 39 (2):190-201), providing an integrated overview of its biology in mammals. From the prospective multicentre European COSMOS cohort, **P. Barrera-Baena et al** (Nephrol Dial Transplant 39 (4):618-626) concluded that hyperphosphatemia was independently and consistently associated with an increased bone fracture risk in haemodialysis (HD) patients. **L. Gan et al** (Clin Kidney J 17 (1):sfad216) reported that tenapanor significantly reduced serum P levels in a randomized phase 3 trial in Chinese patients undergoing HD.

2) A European consensus statement on the recommended **calcium (Ca)** intake in adults and children with chronic kidney disease (CKD) was finally published by **P. Evenepoel et al** (Nephrol Dial Transplant 39 (2):341-366). For example, it includes a suggested total calcium intake from diet and medications of 800–1000 mg/day and not exceeding 1500 mg/day to maintain a neutral calcium balance in adults with CKD. On the other hand, **S. Goto et al** (Nephrol Dial Transplant 39 (4):637-647) described from a 9-year prospective cohort Japanese study that transient *hypo*calcemia (corrected calcium <8.4 mg/dL) was associated with an increased risk of cardiovascular (CV) events in both cinacalcet users and all patients. **P. Evenepoel and H.S. Jørgensen** (Nephrol Dial Transplant 39 (4):557-559) published an associated editorial, and **M.J. Lloret et al** (Clin Kidney J 17 (3):sfae048) analyzed whether denosumab-induced *hypo*calcemia is an avoidable complication in patients treated with dialysis.

3) Regarding the issue of **CV risk** in patients with CKD, **H. Arase et al** (Clin Kidney J 17 (6):sfae154) described the potential CV-bone-*skeletal muscle* axis as strong outcome predictor in patients undergoing HD. avoidable complication in patients treated with dialysis. **E. Arroyo et al** (Nephrol Dial Transplant 39 (2):264-276) examined the relationship between 3-*epi*-25 hydroxyvitamin D3, and cardiovascular functional and structural endpoints in patients with CKD. They concluded that changes in 3-epi-25(OH)D3 levels may regulate cardiovascular functional capacity in patients with advanced CKD. **N. Nishibori et al** (Clin Kidney J 17 (6):sfae121) demonstrated that patients on extended vs conventional HD had lower calciprotein levels despite no significant differences in serum P levels, and **U. Thiem et al** (Clin Kidney J 17 (6):sfae097) concluded that PTH lowering with etelcalcetide did not result in statistically significant changes in T50 but homogenous reductions in serum levels of calciprotein monomers, primary and secondary calciprotein particles were observed in HD patients. **J. Jin et al** (Clin Kidney J 17 (3): sfae038) built a nomogram based on miR-129–3p and clinical indicators to evaluate the probability of *vascular calcification* in HD patients. Finally, **M. Kanbay et al** (Clin Kidney J 17 (1): sfad276) published a comprehensive review suggesting that *Klotho* could open the door to novel interventions aimed at addressing the challenges of aging and neurodegenerative disorders.

4) How to assess **bone health** in patients with CKD (ten tips) was published by **H.S. Jørgensen et al** (Clin Kidney J 17 (5): sfae093). They addressed knowledge gaps in the diagnosis, particularly early detection, appropriate "real-time" monitoring, and emerging diagnostic tools. **V. Petrauskiene et al** (Clin Kidney J 17 (1): sfad287) evaluated the effects of exercise training on bone mineral density (BMD) in patients with CKD G3–5 and concluded that twelve months of *balance* training together with *endurance* training seemed to be superior to *strength* training in maintaining and improving BMD in this small randomized controlled RENEXC trial. A retrospective cohort study using a nationwide population-based database by **A. Okada et al** (Clin Kidney J 17 (1): sfad302) linked proteinuria with an increased risk of developing hip or vertebral fractures after adjustment for kidney function.

5) **Miscellany**: **E.D. Lederer et al** (Clin Kidney J 17 (6): sfae143) described in their review a novel approach to CKD-Mineral Bone Disorder (MBD) combining mathematical modelling of biologic processes with machine learning artificial intelligence techniques as a tool for the generation of new hypotheses and for the development of innovative therapeutic approaches. **M. Fusaro et al** (Clin Kidney J 17 (1): sfad290) launched a national Italian survey to inquire about the use of bone biomarkers in the management of CKD-MBD patients, revealing a marked heterogeneity in the management of CKD-MBD and a suboptimal implementation of guidelines. Interestingly, **D. Rodriguez et al** (Clin Kidney J 17 (1): sfad256) reported that sclerostin levels were increased in recurrent kidney stone formers independent of hypercalciuria and significantly associated with their status. Serum sclerostin levels were not associated either with vitamin D, urinary Ca and P or other urinary lithogenic risk factors

Finally, the contents of the 61st ERA Congress 2024 can be found in the 2024 Nephrol Dial Transplant Issue Supplement # 1.

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