Revisiting the KDIGO clinical practice guidelines on CKD-MBD

A report summarizing the results of the 2013 KDIGO Controversies Conference on CKD-MBD has recently been published by Ketteler et al. The objective of the Controversies Conference was to determine whether new data published since the investigation process for the 2009 KDIGO CKD-MBD guidelines were sufficient to warrant updates to those guidelines.

In this article, we summarize the findings of the four working groups at the Controversies Conference.

CALCIUM AND PHOSPHATE

The calcium and phosphate work group identified five existing guidelines statements that should be re-assessed in light of new evidence. The group recommended that updated guidelines should:

- Consider differentiating CKD-MBD treatment recommendations between dialysis and pre-dialysis populations.
- Consider recommendations related to calcium and calcium-free phosphate binders, given recent clinical trials and an updated meta-analysis by Jamal et al. which identified a 22% mortality risk reduction associated with use of non-calcium-based binders.
- Assess whether or not serum calcium should be maintained “in the normal range” in all stages of CKD, on the basis that potential scenarios may lead to a positive calcium balance.
- Provide greater clarity on dietary phosphate restriction, in light of data suggesting that different phosphorus/protein sources, as well as phosphate additives, have significant effects on the level of gastrointestinal phosphorus absorption.

In addition, the working group identified several needs for further research, including:

- Clinical trials with different phosphate targets to assess clinical outcomes in CKD 4-5D and 4-5T patients, stratified by patients with a positive calcium balance, moderately elevated phosphate levels, and severe hyperphosphatemia.
- Assessing the feasibility of using FGF-23 as a biomarker to guide future therapeutic decision making.

VASCULAR CALCIFICATION

In contrast to the calcium and phosphate group, the vascular calcification work group was unanimous in its conclusion that there was no new data of sufficient quality to warrant reassessment of the existing KDIGO guidelines. The group agreed that cardiovascular calcification was clinically significant and should be considered in the management of CKD-MBD, in line with the existing guidelines. However, the overall consensus of the group was that new data, including from the INDEPENDENT and ADVANCE studies, gave strength to existing clinical practice guidelines.

BONE QUALITY

The bone quality work group recommended that the relevant KDIGO guidelines should be re-evaluated to consider alternative anti-resorptive and anabolic therapies, besides bisphosphonates, for the prevention of fractures in patients with CKD.

The work group also examined new data related to the guidelines on bone mineral density (BMD) testing. These guidelines currently state that BMD testing need not be performed routinely in patients with CKD as it does not predict fracture risk, a suggestion based on limited cross-sectional studies. The working group identified several new studies which, taken together, require a re-assessment of these guidelines. In particular two prospective studies were able to demonstrate that femoral neck BMD was associated with a future risk of fractures in patients with CKD. The work group concluded that the data available was sufficient to associate a lower BMD with fracture risk in CKD patients.

VITAMIN D AND PTH
This work group’s recommendations were largely influence by the OPERA\textsuperscript{[5]} and PRIMO\textsuperscript{[6]} clinical trials. Both trials failed to identify beneficial effects of lowering PTH with paricalcitol on cardiac structure and function, and indicated an increased risk of hypercalcemia. As such the recommendation of treatment with calcitrol or vitamin D analogs in patients whose serum PTH is rising and is persistently above upper limits, was proposed for re-evaluation.

**OVERALL CONCLUSION OF CONFERENCE**

The overall consensus reached by the KDIGO Controversies Conference was the need for a selective update to the 2009 guidelines, specifically 12 statements within those guidelines, based on the new data available. This revision process is continuing at present.

**REFERENCES**


