Foreword

The importance of controlling disorders of mineral metabolism in kidney disease cannot be over-emphasized. Over the last few years, disturbances in mineral metabolism have been recognized to contribute to the high morbidity and mortality in patients with chronic kidney disease, as have certain therapies traditionally used to manage hyperphosphatemia and secondary hyperparathyroidism.

This supplement contains several articles pertaining to the risks of mineral and metal accumulation from phosphate-binding agents in dialysis patients. Molony and Murthy discuss important lessons to be learned from past experiences with aluminum- and calcium-based phosphate binders. Klemmer describes how calcium-based phosphate binders contribute to the calcium load and can lead to a state of positive calcium balance, potentially promoting cardiovascular calcification – a predictor of mortality, even in the absence of hypercalcemia.

Raggi discusses the results of the Treat-To-Goal trial and several extension studies, in which chronic hemodialysis patients were randomized to receive either calcium-based phosphate binders or sevelamer hydrochloride – a non-absorbed, calcium-free, metal-free phosphate-binding agent.

Traditional aluminum-based and calcium-based phosphate binders are indeed absorbed and do accumulate in the body. There are substantial risks associated with the absorption of metals and minerals in dialysis patients. These risks have been under-appreciated in the past. It is essential that we learn from our past experiences with metal- and mineral-containing phosphate binders. In particular, concerns exist about the safety of long-term use of absorbed compounds that can accumulate in the closed system represented by patients treated with maintenance dialysis. Recently developed metal-based phosphate-binding agents must be considered in light of experiences with other phosphate binders; the potential risks of absorption and accumulation should be carefully evaluated before advocating their widespread use.

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