Evolving concepts in the management of renal osteodystrophy

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Renal osteodystrophy presents an ongoing challenge for clinicians, despite numerous therapeutic advances in its management. Hyperphosphatemia is found in approximately 70% of patients undergoing regular dialysis, and secondary hyperparathyroidism is common. Soft-tissue and vascular calcifications also often occur in patients with end-stage renal disease. Recently, concern has developed about potentially adverse consequences associated with certain therapeutic interventions designed to manage secondary hyperparathyroidism and renal bone disease, particularly with regard to vascular calcification. Treatment with vitamin D sterols and the use of large oral doses of calcium as a phosphorus-binding agent, either alone or together with vitamin D therapy increase the risk of soft-tissue calcification in patients with end-stage renal disease. Vascular calcification contributes substantially to the development of cardiovascular disease and to high mortality rates from cardiovascular causes. Therefore, it is appropriate to re-examine the guidelines for managing renal osteodystrophy in patients undergoing long-term dialysis. Alternative strategies for managing phosphorus retention are being implemented, and new phosphate-binding agents are being developed. Vitamin D analogs that may have a greater therapeutic index than calcitriol are also available for clinical use. The successful development of calcimimetic compounds would provide another mechanistically distinct therapeutic approach that could be used either alone or together with vitamin D to more effectively manage secondary hyperparathyroidism. (Hong Kong J Nephrol 2002;4(1):22-28)

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