

LANTHANUM CARBONATE VS. SEVELAMER HYDROCHLORIDE FOR THE REDUCTION OF SERUM PHOSPHORUS IN PATIENTS ON DIALYSIS

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Sustained reduction of hyperphosphatemia has been shown to decrease mortality risk in incident dialysis patients. However, calcium-based phosphate binders (PBs) have been linked with vascular calcification and adynamic bone disease, and may contribute to cardiovascular mortality risk. Effective non-calcium PBs may be advantageous to control serum phosphorus (Phos).

Lanthanum carbonate (LC) and sevelamer hydrochloride (SH) are non-calcium PBs which have been used in CKD Stage 5 patients on dialysis. Data are sparse on the comparative efficacy of these agents to lower Phos. To gain a better understanding of this, a randomized open-label, 2-way cross-over study was performed.

CKD Stage 5 patients undergoing hemodialysis (≥ 2 months) and not receiving LC or SH were eligible; those receiving cinacalcet hydrochloride, or magnesium or aluminum-based PBs were excluded. Following screening (≤ 1 week) and washout (2–3 weeks) patients with Phos ≥ 6.0 mg/dL and serum calcium ≥ 8.4 mg/dL ($N = 182$) were randomized (1:1) to LC or SH (up to 3000 and 6400 mg/day, respectively). Following 4-weeks of treatment, patients completed a further 2-week washout period and switched to the alternative PB for another 4 weeks.

Efficacy endpoints included reduction of Phos and the percentage of patients achieving a $\geq 25\%$ reduction in Phos (both from baseline) on LC and SH. Safety assessments were also performed.

The mean (\pm SD) age of patients was 55.5 ± 13.1 years (safety population, $n = 181$), 56.4% were male and 60.2% were Caucasian. Diabetes was the primary cause of kidney failure in 44.8% of cases. The mean (\pm SD) baseline Phos was 7.3 ± 1.9 mg/dL; 40.9% of patients had Phos concentrations ≥ 7.5 mg/dL.

Given the scarcity of comparative trials, completion of biostatistical analyses on this study will provide data to guide use of PBs in clinical practice.