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Serum Calcium Reductions Among Patients on Hemodialysis Initiating Cinacalcet

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Introduction: Cinacalcet lowers parathyroid hormone (PTH) and serum calcium (Ca) levels as a result of its mechanism of action. The frequency and degree of, physician response to, and patient recovery from Ca reduction after initiating cinacalcet has not been described.

Methods: The cohort included all new cinacalcet users with Ca ≥ 8.4 mg/dL at cinacalcet initiation who received in-center hemodialysis at a large dialysis organization (LDO), and were enrolled in the LDO's prescription benefits service (N=13,723). Patients were categorized as those who did not experience a reduction in Ca to < 8.4 and those in whom Ca fell to levels 8.0-8.3, 7.5-7.9, and < 7.5 mg/dL. Baseline patient characteristics were compared between these levels. We examined the frequency of physician response and the likelihood of Ca recovery according to different levels of Ca reduction. Data were unavailable to determine if patients who experienced Ca reductions < 8.4 mg/dL had symptomatic manifestations.

Results: Overall, 6,437 (46.9%) patients experienced a reduction in Ca to < 8.4 mg/dL. The majority of these (68.9%) had a Ca level of 8-8.3 mg/dL, while only 6.6% had a Ca < 7.5 mg/dL. Higher baseline PTH and alkaline phosphatase were associated with lower resulting Ca levels. Among patients with Ca reductions, 48.6%-63.5% received intervention, 15.6%-28.4% discontinued cinacalcet, and the majority of patients recovered to Ca ≥ 8.4 mg/dL within 90 days. Only modest recovery differences were noted between patients who did versus did not receive intervention and patients who did versus did not discontinue cinacalcet.

Conclusions: After cinacalcet initiation, Ca reductions to < 8.4 mg/dL were common, but Ca levels below 7.5 mg/dL were infrequent. Patients with more severe secondary hyperparathyroidism were more likely to manifest Ca reductions to < 8.4 mg/dL following cinacalcet initiation. Recovery was common with or without directed intervention.

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