

Calciophylaxis in dialysis patients: a single centre audit

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Introduction:

Calciophylaxis or calcific uraemic arteriopathy (CUA) is a rare syndrome; characterised by progressive and painful skin lesions. It has an estimated incidence of 1-4 % among dialysis patients annually. Mortality is estimated to be up to 80%; possibly due to infections of necrotic skin resulting in sepsis. Several modifiable risk factors have been identified for calciophylaxis including vitamin K antagonists, hyperparathyroidism and calcium and vitamin D supplementation. Sodium thiosulphate can be an effective treatment in some patients.

Methods:

We retrospectively examined the diagnosis and management of calciophylaxis in patients with end stage renal failure in a single centre. We used local guidelines as the audit standard, in order to assess management, modification of risk factors and clinical outcomes. We reviewed the medical records of all patients treated for calciophylaxis from 2013 to 2019. A total of 18 (N=18) patients were identified and their demographic, dialysis history, biochemistry, risk factors, duration of treatment and mortality data was retrieved from electronic health records.

Results:

18 patients were treated for calciophylaxis from 2013 to 2019. Mean age at diagnosis was 59.8 +/- 12.7 years. Just over half of the patients were female. 14 (88%) patients were on haemodialysis and 4 (22%) on peritoneal dialysis. Average treatment duration was 12.8 +/- 15.5 months. Four (22%) patients had complete recovery and treatment was discontinued. Nine (50%) patients died. Of patients on peritoneal dialysis, 1 (25%) switched to haemodialysis and 3 (75%) remained on peritoneal dialysis. One patient remaining on peritoneal dialysis recovered. Just over a quarter of patients underwent skin biopsy with the involvement of dermatology team to reach a diagnosis. All patients were treated with sodium thiosulphate, with all but 3 patients remaining on the starting dose. 9 (50%) patients were receiving vitamin K antagonists (Warfarin) at the time of diagnosis. 5 (55%) of these stopped warfarin following diagnosis. 15 (83%) patients had documented hyperparathyroidism, all of whom were treated with either parathyroidectomy or calcimimetic. 13 (72%) patients were on vitamin D therapy, this was stopped in 7 (54%) patients. 14 (78%) patients were on calcium containing phosphate binders. These were stopped in all but one case. Advanced care planning including palliative team involvement was documented in just 2 patients.

Conclusion:

Our audit demonstrated calciophylaxis is a significant clinical problem within our unit. We were able to modify risk factors in all cases and adherence to local guidelines was good. Despite this patients with calciophylaxis had poor clinical outcomes, with a mortality of 50%. Patients who remained on peritoneal dialysis responded as well to treatment as those on haemodialysis. Calciophylaxis is a debilitating syndrome with a poor prognosis from the onset of diagnosis given the high morbidity and mortality associated with

this condition. Reducing exacerbating risk factors and prompt initiation of sodium thiosulphate are fundamental in managing this condition.