



CPC-145

Treatment of cutaneous calciphylaxis with sodium thiosulfate: a case report

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BACKGROUND AND OBJECTIVE:

Calciphylaxis is a rare and potentially life-threatening condition. It is thought to result from arterial calcification causing complete vascular occlusion and subsequent cutaneous infarction. Most often, it is a complication of end-stage renal failure or hyperparathyroidism. This condition may be present in up to 4% of end-stage renal disease patients and is usually linked with high P^*Ca levels, high levels of parathyroid gland and obesity. The clinical picture is typically characterized by very painful skin lesions and ulcerations following calcification and occlusion of small cutaneous arterioles. Recently some evidence support the use of intravenous sodium thiosulfate (STS).

POURPOSE:

As randomized controlled studies on STS efficacy are lacking, this abstract focuses on a case report of calciphylaxis successfully resolved with I.V.STS.

METHODS:

We report a case of calciphylaxis in a 77-year-old white woman with CKD. As the patient was already under biphosphonates, and phosphate binders, STS was suggested as a good treatment alternative. STS was administered intravenously, using 25 g diluted in 100 cc of normal saline during dialysis.

RESULTS:

Calciphylaxis episode was related with a high calcium-phosphorus product ($P^*Ca=50$), besides a high increase of parathyroid hormone (577 pg/ml). Clinical signs included cutaneous infarction and pain (figure 1). Four months after the initiation of STS injuries began to improve (figure 2) and the P^*Ca was reduced but still remained high ($P^*Ca=60$). Parathyroid hormone level maintained the same. Patient is still under I.V. STS treatment.



Fig1: Skin lesions in this patient were developed in May 2012. PTH level was 577 pg/ml and P^*Ca was 50. The patient was under biphosphonates, cynacalcet, and acenocumarol.

Treatment was established with Sodium Tiosulfate 25 mg iv diluted in 500 ml Saline Isotonic Solution, three times per week at the end of the hemodialysis session.



Fig2: September 2012: Skin lesions after four months. Analytical parameters still similar ($P^*Ca=60$) and PTH level was 450 pg/ml

CONCLUSION:

Current calciphylaxis treatments alternatives aim to lowering serum calcium phosphate concentration and thereby preventing, or even reversing, calcium phosphate oversaturation, precipitation and, finally, calcification. Administration of I.V. sodium thiosulfate, which sequesters calcium ions to form highly soluble calcium thiosulfate complexes, can prevent calcium phosphate precipitation.

CONFLICT OF INTEREST

No conflict of interest

18th Congress of the EAHP – 13-15 March 2013, Paris

