The aim of the present study is to analyze the beneficial effects of four possible local antidotes for calcium gluconate extravasation: hyaluronidase, sodium thiosulfate, triamcinolone acetonide and physiological saline solution” Pacheco Compañía et al (2018).

Abstract:

BACKGROUND: Calcium Gluconate Extravasation is a process that can cause serious lesions, such as necrosis and calcification of the soft tissues. The aim of the present study is to analyze the beneficial effects of four possible local antidotes for calcium gluconate extravasation: hyaluronidase, sodium thiosulfate, triamcinolone acetonide and physiological saline solution.

METHODS: 74 BALB/c mice were used in the study. The substances selected for use in this study were calcium gluconate (4.6 mEq/ml), hyaluronidase (1500 IU/ml), sodium thiosulfate (25%), triamcinolone acetonide (40 mg/ml 0.5 mg/kg) and saline solution 0.9%. Five minutes were allowed to lapse after the calcium gluconate infiltration and then an antidote was infiltrated. After three weeks, a skin biopsy was performed and a radiographic and histological study carried out.

RESULTS: Only in the group infiltrated with sodium thiosulfate did all skin lesions disappear after the 3-week period following infiltration. In the radiographic study, calcium deposits larger than 0.5mm were observed in 40% of cases without an antidote, in 33% with triamcinolone acetonide, in 13% with a saline solution and none at all with thiosulfate and hyaluronidase. In the histological study, calcium deposits were found in 53% of cases without antidote, 100% of cases with triamcinolone acetonide, 33% of cases with saline solution and 13% of cases with sodium thiosulfate or hyaluronidase.

CONCLUSIONS: Sodium thiosulfate and hyaluronidase prevent the development of calcium deposits after calcium gluconate extravasation.

Reference:
doi: 10.1097/PRS.0000000000004640.