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Effect of intranasal calcitonin on healing times in patients with acute Charcot foot:

A randomized controlled trial.

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Background and Aims: Charcot foot is considered a risk factor for foot ulceration and for leg amputation; the treatment is often lengthy and difficult. The aim of the study was to evaluate the effectiveness of intranasal calcitonin on healing times in patients with acute Charcot foot in a randomized controlled trial.

Material and Methods: Thirty-one patients with acute Charcot foot treated in our foot clinic during a 16 month period were randomized to receive intranasal calcitonin 200 IU/day together with calcium supplementation 1000 mg/day [study group (n=16)] or on calcium supplementation 1000 mg/day in monotherapy [control group (n=15)]. Acute Charcot foot was defined by clinical signs - warm, swollen foot and skin temperatures ≥ 2 °C at the site of maximum deformity of the affected foot compared to a similar site on the contralateral foot and confirmed by plain x-ray and three-phase technetium bone scan. All patients also had standard treatment of the Charcot foot including off-loading by removable contact cast or cast walkers, with no significant difference between groups in the type of used off-loading device. All subjects were instructed to weight bear on their casted extremity using assistive devices (crutches). Healing time was defined as the number of days from initial off-loading device application until cessation of casting. The decision of off-loading cessation was made on the basis of clinical signs (foot without oedema and redness with skin temperature difference < 2 °C during 6 weeks period of intermittent off-loading) and favourable radiological and isotopic examination of affected foot.

Results: The midfoot was the most commonly affected site [13 (81%) in the study group, 13 (86%) in controls; NS]. There were a significant shorter healing times in the study group in comparison with controls [mean 159.8 days (95% CI 137.6-182.1) vs. 195.2 days (95% CI 166.8-223.7); $p < 0.05$]. More than 50% of patients were healed after 152 days in study group and after 190 days in controls. The range of healing time was 86-241 days in study group and 123-328 days in controls.

Conclusion: This study suggests that patients with acute Charcot foot may clinically apparent benefit from calcitonin treatment, which shortens healing times of the Charcot foot.

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