

Letter to the Editor

Does l-ascorbic acid have an analgesic effect?

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The case report presented by Arabadzhiev *et al.* [1] aims to show that l-ascorbic acid (3000 mg/day, for 10 days) can control persistent severe pain (NRPS grade 8/10) persistent on a mandibular incisor which does not retroceded despite 6 weeks of drug treatment (antibiotic therapy, tramadol, ibuprofen, noramidopyrine), dental treatment (root canal treatment, apicectomy) physical treatment (diode laser) and infiltration of bupivacaine 0.5%. Faced with such a complex clinical status, three-dimensional imaging would have been of great help in the diagnosis. Technetium-99m bone scintigraphy would also have ruled out an infectious bone etiology [2]. The extrapolation of the therapeutic efficacy of ascorbic acid on pain associated with colorectal and gastric cancers, bone metastases, post herpetic neuralgia or labial herpes to pulp necrosis pain still remain controversial. l-ascorbic acid has an anti-inflammatory and antioxidant action and acts on the central nervous system and the patient's immunity. It would be necessary to know the metabolic profile and the immunological status of the patient as well as her antecedents. It seems risky to systematize ascorbic acid in persistent post-surgical pain without prior dosage, the daily intake being already around 100 mg. The contraindications of ascorbic acid (calcium oxalate urolithiasis, phenylketonuria, primary hemochromatosis, G6PD deficiency or thalassemia *etc.*) must also be evaluated when high doses are proposed. Vitamin C, especially in high doses, is a source of increase in serotonin by hydrolyzation of triptophan which can, on the contrary, be a source of sensitization to pain as serotonin acts on the serotonergic receptors 5-HT1A, 5-HT1B, and 5-HT3 which are pro-nociceptive [3]. The pronounced role of serotonin is well identified at the periphery, locally during inflammatory processes, but it is also exerted during nerve damage. Regarding the lack of effectiveness of the diodlaser 810 nm with an intensity of 1.6 W and 300 J/session reported by the authors, it is noticeable that low-level laser used

at 808 nm, 100 mW, 60 s and 7.64 J cm⁻² has, however, shown in a randomized study its effectiveness on pain related to dry socket [4]. Low-laser therapy enhances microcirculation in mucous and bone tissue, reduces inflammation and has an antibacterial effect [5]. The multiplicity of treatments followed by administration of l-ascorbic acid does not allow to conclude on its direct analgesic effect. In particular, the persistent analgesic effect of injections of 0.5% bupivacaine about 5 days is well documented on acute herpes zoster ophthalmic pain [6] and may have contributed to the pain relief parallelly to the use of non-steroidal inflammatory drugs. This rare clinical case further illustrates a case of neuropathic pain caused by peripheral sensitization [7] and which relief was difficult to obtain despite multiple treatments. l-ascorbic acid probably had a basic adjuvant effect with no proven direct analgesic efficacy; the combination of numerous treatments including l-ascorbic acid could have contributed to pain relief. The authors recognize the need of a comparative study to support their hypothesis. A study protocol that could answer the question would be a three-arm randomized controlled trial: (l-ascorbic acid) versus (l-ascorbic acid + standard treatment) versus (standard treatment). However, Arabadzhiev's paper has the merit to focus on the possible co-analgesic effect of l-ascorbic acid in acute orofacial pain.

Conflicts of interests: The authors declare that they have no conflicts of interest in relation to this article.

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