International Wound Journal ISSN 1742-4801

LETTER TO THE EDITOR

Reply: to Chronic venous ulcer treatment with topical sevoflurane by Imbernón *et al.*

Dear Editors,

We have read with interest the article by Imbernon *et al.* on treatment of chronic venous ulcer with topical sevoflurane (1). It has been documented that sevoflurane instillation into skin ulcers has a rapid, intense and durable anaesthetic effect (2,3). The authors describe a case report that showed quick, intense and lasting analgesic effect but without finding a sensitisation capacity for sevoflurane.

Off-label protocol use of topical sevoflurane in the management of patients with long-standing refractory decubitus and vascular ulcers was submitted to and approved by the Institutional Ethics Committee. We have treated 36 patients with this pathology. In 34 of 36 (94.4%) of our patients treated for a mean of 10·5 months (3–24 months), topical instillations of sevoflurane allowed an excellent control of basal pain, with rapid, intense and lasting relief, as well as an improvement in the quality of life and a significant reduction in the consumption of analgesics. Loss of efficacy over time was not observed, which appears to indicate the absence of de-afferentiation phenomena commonly observed with other topical treatments such as capsaicin (4). After treating patients for 19–24 months we did not observe any sensitisation phenomena with the use of sevoflurane.

At this point we address three issues.

The first issue concerns the intense, analgesic and lasting effect for 8 hours. The duration of effect is highly variable, ranging from 2–48 hours.

The second issue is the statement of the authors about the fact that most of the right leg ulcers were healed after 3 weeks of treatment with no evidence of recurrence or new lesions. In our experience, there is a gradual but slow closure of skin ulcers and a high rate of recurrence by inclusion criteria (patients with Venous Clinical Severity Score ≥2, in whom surgical treatment had been ruled out). This statement is in line with those presented in the 17th Annual Meeting of the European Society of Regional Anesthesia in Barcelona in October 2011, where a series of nine patients was presented, and complete ulcer healing was achieved in four.

The third question raised by Dr Imbernon concerns antimicrobial action. It has been suggested that direct application of sevoflurane has an antimicrobial effect on ulcers that are superinfected by multidrug-resistant *Pseudomonas aeruginosa*. An in vitro bactericidal effect against sensitive and multidrug-resistant *Staphylococcus aureus*, *P. aeruginosa* and *Escherichia coli* has been found to proceed by an unknown action mechanism (5). In our experience, topical instillation with liquid sevoflurane on the ulcer bed does not reduce the occurrence of infections and does not control established gram-positive and -negative infections.

Topical sevoflurane presents a favourable benefit/risk balance, with an appropriate safety and efficacy profile. The standard pharmacological management comprises the use of different drugs to promote healing and tissue regeneration, prevent infection and ease pain. Topical sevoflurane promises to be an ideal drug, and could prove to be a promising strategy for analgesia and epithelialisation to control vascular ulcers. Furthermore, infection should be controlled with ulcer cleansing and, if necessary, the use of systemic antibiotics should be proposed.

Acknowledgements

The results presented are part of the doctoral thesis within the Doctoral Program in Pharmacy of the University of Granada.

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doi: 10.1111/iwj.12709

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