

Effects of Recombinant Human Granulocyte/Macrophage Colony-Stimulating Factor on Diabetic Lower Extremity Ulcers: Case Series of Nine Patients [Letter]

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Dear editor

We appreciate the published article by Zhang et al, “Effects of Recombinant Human Granulocyte/Macrophage Colony-Stimulating Factor on Diabetic Lower Extremity Ulcers: Case Series of Nine Patients”.¹ The authors highlight the research problem because Diabetic Foot Ulcer (DFU) has a high prevalence rate and recurrence rate, cost burden, prolonged time to healing, and suboptimal healing percentage. The research problems align with our clinical experience, and the above factors lead to a high dropout rate from wound care treatment. Thus, finding new modalities to shorten healing time is an essential approach in the management of DFU, including Hematopoietic Colony-Stimulating Factors (CSFs) based intervention.

The study introduces Recombinant Human Granulocyte/Macrophage Colony-Stimulating Factor (rhGM-CSF) to confirm its effects in clinical practice among of nine DFU cases. Despite the authors reporting that 7 out of 9 ulcers had wound size reduction to zero (0 cm²) by day 18, one by day 21, and another by day 24, we note some method-related issues need to be clarified to make it possible to be replicated by other researchers.

First, the authors refer neuropathy to the Carrington Study, as a reduced nerve conduction velocity confirmed by electromyogram and abnormalities in pinprick, vibration perception, pressure perception, and temperature perception.² The neuropathy data is presented in Table 1 as nominal data (+ or -) but fails to inform which test the authors perform and the diagnostic criteria to confirm neuropathy. We would like to highlight that currently, The International Working Group on the Diabetic Foot (IWGDF) recommends the assessment of neuropathy using the Semmes-Weinstein 10-gram monofilament test (Pressure Perception), 128Hz tuning fork (Vibration Perception) or the Ipswich Touch Test as alternatives.³ In addition, the diagnostic tool in the Carrington study is not a diagnostic criterion for neuropathy but a predictor of DFU-related problems.

The second issue concerns the complete epithelialization of DFU as the end point of observation. However, we noted incomplete epithelialization in the last figure of case numbers 1, 5, 6, and 9. In Figure 1, the ulcer remains covered by slough (day 12); in Case 5, epithelialization is unclear and might be distorted by the presence of callus (day 12); in Case 6, epithelialization is not complete as there is remaining granulation tissue (day 18), and in case 9, epithelialization is unclear to observe (day 15). Notably, since the authors used Image J, the percentage of epithelialization should be quantifiable instead of subjective measurement.⁴

Third, regarding the healing process, it is difficult to infer that the ulcers healed solely due to rhGM-CSF therapy. In the methods, the authors report that rhGM-CSF was applied topically on the wound bed and then covered by a wound dressing. The type of wound dressing used is not specified—whether it was an infection-type dressing (eg, silver dressing), exudate-type dressing (eg, foam), moisture-retentive dressing (eg, hydrocolloid), or other. Additionally, two

other modalities, the debridement technique, and wound cleansing, which significantly contribute to the wound-healing unreported clearly. While the authors report using these modalities, they do not specify the type of debridement (surgical, autolytic, mechanical, or other), except for case 3. Overall, we appreciate this case series as it provides new insights into managing DFUs since rhGM-CSF are promising in clinical practice.

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Disclosure

The author reports no conflicts of interest in this communication.

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