Nanocrystalline Silver Dressings in Extensive Pemphigus Vulgaris: An Underutilized Adjunct

Sir,
A 30-year-old married female presented with widespread vesicles, bullae, and erosions over the scalp, face, and trunk. Tzanck smear showed acantholytic cells and histopathology and direct immunofluorescence confirmed pemphigus vulgaris (PV) (pemphigus disease area index [PDAI]-117/250). She was febrile with raised C-reactive protein (CRP) and a skin swab from the erosions was positive for methicillin-resistant Staphylococcus aureus (MRSA).

Oral prednisolone (1 mg/kg) was instituted along with azathioprine (2 mg/kg) because of the high PDAI. Intravenous vancomycin was given for 2 weeks due to repeated positive swab cultures, though blood cultures were sterile.

In view of the continued disease activity in the form of daily new vesicles after 4 weeks and extension of large erosions over the back and buttocks, rituximab (2 doses of 1 g 2 weeks apart) and nanocrystalline silver (NCS) dressings (ACTICOAT™, Smith and Nephew INC.) were initiated. After the second NCS change itself (10 days), significant reepithelization was apparent and the skin swab culture was sterile. After four changes, the surface area of the erosions over the back and buttocks and the PDAI significantly decreased [292–42 cm² and 117/250 to 49/250], respectively [Figure 1a–h]). During this time, the systemic treatment was unchanged besides gradual tapering of the steroid doses.

No dyselectrolytemia occurred though the blood silver levels could not be estimated.

Discussion
In extensive PV, the twin challenge is to achieve rapid reepithelization of the erosions and prevent/treat secondary infection. PV erosions serve as a nidus for microbial colonization which may lead to septicemia and possibly death.[1] Thomas and Nair found that MRSA was the commonest pathogen cultured from PV inpatients.[2] While most MRSA strains are susceptible to Vancomycin, Linezolid, or Teicoplanin, these are costly and are not first-line antibiotics in standard hospital formularies.

We used ACTICOAT™, Smith and Nephew PLC, which is a non-adherent NCS containing nanocrystallized silver ions in a cluster structure often used in Burns units. Silver dressings are used for infected wounds where excessive bioburden delays healing; hence, in colonized erosions such as our case, they could hasten resolution.[3] A net-like structure allowing drainage of the exudate, reduced dressing change frequency, non-adherence to erosions, thus, reducing pain and bleeding, and fewer bacteremias resulting from MRSA-infected wounds make NCS a preferred dressing in large PV erosions.

Masjedi et al. compared ACTICOAT™ with silver sulfadiazine in 16 pemphigus patients with erosions ranging from 2 to 10 cm² and concluded that ACTICOAT™ was superior.[4] But this data was restricted to smaller areas, where conventional dressings would possibly have sufficed, unlike our patient, where much larger erosions (>200 cm²) were encountered. There is no consensus regarding the detrimental effects of silver in blood but over short periods, the benefits outweigh the risks (argyria, electrolyte imbalance seen more frequently with chronic use of traditional silver preparations).[3,5]

The presence of significant healing within 2 weeks of starting NCS after the initial...
Extension of erosions on steroids and azathioprine, much before the 3–8 weeks taken by rituximab to exhibit its action, emphasizes the usefulness of NCS. In fact, the systemic treatment was tapered during the use of NCS which underscores that reepithelization was, at least in part, consequent to the institution of NCS. Though we do not suggest that NCS can replace systemic treatment, it can be a useful adjunct in extensive PV erosions.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

References

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