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Reply to: “Skin damage among health care workers managing coronavirus disease-2019”



To the Editor: We read with interest the article “Skin damage among health care workers managing coronavirus disease-2019” written by Lan et al.¹

The main skin problems in health care managing COVID-19 and using medical devices are the hand eczema and the skin damage affecting the nasal bridge, cheek, and forehead. Lan et al¹ reported that the health care workers who wore medical devices for more than 6 hours showed higher risks of skin damage, with desquamation in more than 60% of cases, and other signs, such as erythema, maceration, and ulcers, in a smaller percentage of cases. This skin damage may cause itching and pain¹ and further impair the quality of life among health care workers.

The World Health Organization recommends performing correct hand hygiene with alcohol-based hand rub (preferred in case of not visibly soiled hands) or water and soap, in particular, before touching a patient, before any clean or aseptic procedure, after exposure to body fluid, after touching a patient, and after touching a patient’s surroundings.² The frequent hand hygiene, the use of antiseptics, and wearing of double-layers of gloves for a long time may cause the hand eczema.

At the sites of application of masks, goggles, and facial shield, pressure injuries may develop, from grade 1 (nonblanchable erythema) to grade 2/3 (erosion or ulceration). The medical device—related

pressure injuries may occur on any anatomic location where the medical device is in contact with the skin and particularly where the skin is over bony prominences, such as the forehead, the nasal bridge, and the zygomatic arch.

The University of Pisa (Italy) Wound Healing Unit proposes the topical management of the skin areas at risk of pressure injuries in terms of cleansing, prevention, and treatment (Table I).

The no-sting barrier film spray has shown good efficacy in the management of the skin surrounding chronic wounds, with a significant reduction of the transepidermal water loss values.³ We suggest the use of this product before wearing the medical devices, because the alcohol-free liquid dries quickly after skin application and forms a protective, transparent, and conformable long-lasting barrier film. The use of topical products containing purified omental lipids will help in improving skin barrier function, repairing the epithelial cell membrane, and increasing microcirculation.⁴ These products are also useful to prevent the development of pressure injuries and may be used after removing the medical devices as well the nonadherent dressings (soft silicone/paraffin).

Some authors described the use of thin hydrocolloid dressing to prevent pressure injuries on the nasal bridge in case of acute noninvasive ventilation.⁵ Nonadherent dressings (soft silicone/paraffin) and extra-thin hydrocolloid may theoretically also be used before the medical devices are worn, but further studies are needed to certify that these advanced dressings do not alter the safety of the devices.

Table I. Topical management of pressure injuries in the health care worker using medical devices (masks, goggles and facial shield)

Pressure injuries	Topical management
Cleansing (grade 2/3)	Saline solution Polyhexamethylene biguanide (PHMB)
Prevention	
• Before wearing medical devices	Barrier film spray
Prevention	
• After medical devices removal	Omental lipids cream/emulsion Nonadherent dressings (soft silicone/paraffin)
Grade 1*	Barrier film (spray/sheet) Nonadherent dressings (soft silicone/paraffin)
Grade 2/3*	Extra-thin hydrocolloid Thin polyurethane silicone foam
Scar/hyperpigmentation prevention*	Silicone cream/sheet Photoprotection SPF 50+ (cream/spray/emulsion)

SPF, Sun protection factor.

*Apply after removing medical devices.

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REFERENCES

1. Lan J, Song Z, Miao X, et al. Skin damage among health care workers managing coronavirus disease-2019. *J Am Acad Dermatol*. 2020;82(5):1215-1216.
2. World Health Organization & WHO Patient Safety. WHO guidelines on hand hygiene in health care: First Global Patient Safety Challenge—clean care is safer care. Geneva: World Health Organization; 2009. Available at: <https://apps.who.int/iris/handle/10665/4410>. Accessed January 17, 2020.
3. Dini V, Salibra F, Brilli C, Romanelli M. Instrumental evaluation of the protective effects of a barrier film on surrounding skin in chronic wounds. *Wounds*. 2008;20(9):254-257.
4. Romanelli M, Dini V, Milani M. Topical purified omental lipid formulations in the prevention of skin ulcers: a narrative review. *J Wound Care*. 2019;28(5):284-290.
5. Bishopp A, Oakes A, Antoine-Pitterson P, Chakraborty B, Comer D, Mukherjee R. The preventative effect of hydrocolloid dressings on nasal bridge pressure ulceration in acute non-invasive ventilation. *Ulster Med J*. 2019;88(1):17-20.

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