

Respecting barrier gestures without sacrificing his/her hands

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Since the outbreak of the COVID-19 pandemic, in order to prevent the transmission of SARS-CoV-2 through contact, WHO and health authorities around the world recommend washing hands "regularly and thoroughly with a hydro-alcoholic solution, or with soap and water". Since this barrier measure has been widely applied around the world, several publications have reported iatrogenic skin lesions, especially irritant dermatitis, mainly among health care workers, sometimes responsible for unfortunate work stoppages in the current context of health crisis [1].

Commonly observed lesions are erythema, dry skin with desquamation, then cracks and erosions. They are accompanied by itching and burning aggravated by repeated hand washing. Secondly, dyshidrosis or eczema with oozing lesions may appear, especially in atopic conditions and even bacterial superinfection by *Staphylococcus aureus*. The prolonged wearing of protective gloves can worsen these lesions due to maceration.

These effects have been reported in many countries. The prevalence of hand irritation dermatitis lesions induced by frequent washing is 85% in the USA [2], 62.5% in the UK [3], 90.4% in Germany where the prevalence of contact eczema is only 14.9% [4]. In China, these hygienic practices resulted in a 100% increase of skin lesions when performed more than 10 times a day [5].

Multy-day use of basic pH soap and hydroalcoholic gel, whose alcoholic concentration must be between 60 and 95% according to the WHO, alters the lipidic film and the microbiome of the skin surface. The cells of the skin superficial layers (corneocytes) are protected on their surface by a hydrolipidic film produced by the sebaceous glands and the corneocytes themselves. In addition, there is an intercellular space between the corneocytes that is rich in lipids, particularly ceramides. Frequent washing with soap at pH 8 and hydroalcoholic gel destroy this lipidic protection, causing dryness, cracks and erosions. The skin's resident flora is also altered and can no longer play its protective role in the mechanisms of innate immunity, that leads to inflammation, skin erythema and even eczema.

WHO recommendations for the prevention and treatment of hand skin lesions include:

- Dermocosmetic care, essential in prevention, with the use of:
 - emollients and moisturizers several times a day,
 - soap (cleansing bar or gel) with a pH close to that of the skin (5.5 to 6.5), fragrance and antibacterial-free for hand washing,

- healing creams in case of cracks or erosions. Hand rubbing during professional, household or DIY work, as well as prolonged wearing of gloves should be avoided.

- Drug treatments:

- topical corticosteroids for the most severe cases of eczema lesions, dyshidrosis, contact dermatitis, insuring there is no bacterial superinfection;
- antihistamines to relieve itching.

In order to avoid that a daily hygienic gesture, essential in the fight against Covid-19, which also shows remarkable efficiency in the prevention of seasonal viral infections, becomes by its repetition, a cause of suffering and disability, **the National Academy of Medicine recommends:**

- to give priority to prevention by providing extensive information to healthcare professionals and the general public to teach them how to protect the skin of their hands;
- to treat hand injuries as quickly as possible, as soon as they appear, without neglecting to maintain barrier gestures;
- to ensure the alcohol content of hydroalcoholic gels, as some preparations on the market have a concentration of less than 60% and others, non-alcoholic, are proposed as an alternative to alcoholic gels for their good tolerance; these products, whose effectiveness on SARS-CoV-2 has not been demonstrated, are not recommended by WHO and are declared non-compliant due to an incomplete or incorrect labelling.

References

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