

Irritant Hand Dermatitis and Topical Treatments (3/10)

Visscher M, Davis J, Wickett R. Effect of topical treatments on irritant hand dermatitis in health care workers. *Am J Infect Control* 2009;37:842–850 and 850.e.1–850.e.2.

Irritant contact dermatitis (ICD) can develop from repetitive hand hygiene and is the primary reason for compliance failure among health care personnel (HCP). Chronic ICD has implications for infection control because higher bacterial counts are associated with increased skin compromise. Infection control guidelines recommend using lotions or creams to lessen the irritation. The authors evaluated the effects of 5 to 10 daily applications of a test cream (A: glove and chlorhexidine gluconate compatible) and current lotions/creams (B) compared with a control of normal skin care. The primary outcome was hand skin condition measured as visual erythema and dryness and excess erythema using digital quantitative image analysis for two weeks. Secondary outcomes were hydration and skin condition after four weeks of treatment for the test cream group. Eighty HCP from an intensive care unit participated. After two weeks, knuckle dryness was lower for both treatments than the no treatment control ($P < .02$). Skin treated with "A" had lower knuckle erythema ($P = .03$) than "B" and the control. HCP using "A" had lower excess erythema (right) than "B" and the control ($P < .04$). Excess erythema was lower for "A" and "B" versus the control ($P = .003$). **Reduction in erythema suggests that frequent use of cream A may mitigate the damaging effects of repetitive hand hygiene and allow the skin to recover. Intensive treatment of HCP ICD may be required to counteract the skin compromise and minimize the negative impact on infection control.**



DECS Comment: As the authors mentioned, the primary defense against infection and transmission of pathogens is healthy, unbroken skin. Frequent handwashing with soaps and antiseptic agents can cause chronic irritant contact dermatitis among dental health-care personnel (DHCP). DHCP experiencing occupational-related dermatitis or allergy symptoms need to undergo further evaluation to determine the specific etiology and appropriate treatment, as well as work restrictions and accommodations where applicable. The potential of detergents to cause skin irritation varies considerably. To ease the dryness resulting from handwashing and to prevent dermatitis from glove use, lotions are frequently recommended. However, petroleum-based lotion formulations can weaken latex gloves and increase permeability. For that reason, lotions that contain petroleum or other oil emollients should only be used at the end of the work day.

In A Nutshell: USAF Guidelines for Infection Control in Dentistry

- Educate DHCP regarding the signs, symptoms, and diagnoses of skin reactions associated with frequent hand hygiene and glove use during facility orientation, and annually thereafter.
- Use MTF-approved hand lotions to prevent skin dryness associated with handwashing.
- Consider the compatibility of lotion and antiseptic products (e.g., alcohol-based hand rubs, antimicrobial soaps) and the effect of petroleum or other oil emollients on the integrity of gloves during product selection and glove use. Petroleum-based products can cause breakdown of latex gloves.
- Lotions should be dispensed in small, individual-use containers or pump dispensers that are not opened or refilled to reduce contaminants and bacterial growth.
- All cases of hand dermatitis should be evaluated for treatment and follow-up. If open sores or weeping dermatitis exists, refrain from direct patient contact and handling of patient-care equipment until the condition is resolved.