

“The aim of this study was to assess the skin bacterial richness and diversity in ICU patients and the effect of CHG daily bathing on skin microbiota” Cassir et al (2015).

Reference:

Cassir, N., Papazian, L., Fournier, P.E., Raoult, D. and La Scola, B. (2015) Insights into bacterial colonization of intensive care patients’ skin: the effect of chlorhexidine daily bathing. *European Journal of Clinical Microbiology & Infectious Diseases*. January 22nd. .

Effect of chlorhexidine daily bathing on bacterial colonization in the ICU
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Abstract:

Skin is a major reservoir of bacterial pathogens in intensive care unit (ICU) patients. The aim of this study was to assess the skin bacterial richness and diversity in ICU patients and the effect of CHG daily bathing on skin microbiota. Twenty ICU patients were included during an interventional period with CHG daily bathing (n = 10) and a control period (n = 10). At day seven of hospitalization, eight skin swab samples (nares, axillary vaults, inguinal creases, manubrium and back) were taken from each patient. The bacterial identification was performed by microbial culturomics. We used the Shannon index to compare the diversity. We obtained 5,000 colonies that yielded 61 bacterial species (9.15 ± 3.7 per patient), including 15 (24.5 %) that had never been cultured from non-pathological human skin before, and three (4.9 %) that had never been cultured from human samples before. Notably, Gram-negative bacteria were isolated from all sites. In the water-and-soap group, there was a higher risk of colonization with Gram-negative bacteria (OR = 6.05, 95 % CI [1.67-21.90]; P = 0.006). In the CHG group, we observed more patients colonized by sporulating bacteria (9/10 vs. 3/10; P = 0.019) with a reduced skin bacterial richness (P = 0.004) and lower diversity (0.37, 95 % CI [0.33; 0.42] vs. 0.50, 95 % CI [0.48; 0.52]). Gram-negative bacteria are frequent and disseminated components of the transient skin flora in ICU patients. CHG daily bathing is associated with a reduction in Gram-negative bacteria colonization together with substantial skin microbiota shifts.

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