

Staphylococcus aureus intestinal colonization is associated with increased frequency of S. aureus on skin of hospitalized patients.

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BACKGROUND: Intestinal colonization by *Staphylococcus aureus* among hospitalized patients has been associated with increased risk of staphylococcal infection and could potentially contribute to transmission. We hypothesized that *S. aureus* intestinal colonization is associated with increased frequency of *S. aureus* on patients' skin and nearby environmental surfaces.

METHODS: Selected inpatients were cultured weekly for *S. aureus* from stool, nares, skin (groin and axilla), and environmental surfaces (bed rail and bedside table). Investigator's hands were cultured after contacting the patients' skin and the environmental surfaces.

RESULTS: Of 71 subjects, 32 (45.1%) had negative nares and stool cultures, 23 (32.4%) had positive nares and stool cultures, 13 (18.3%) were nares carriers only, and 3 (4.2%) were stool carriers only. Of the 39 patients with *S. aureus* carriage, 30 (76.9%) had methicillin-resistant isolates. In comparison to nares colonization only, nares and intestinal colonization was associated with increased frequency of positive skin cultures (41% versus 77%; $p = 0.001$) and trends toward increased environmental contamination (45% versus 62%; $p = 0.188$) and acquisition on investigator's hands (36% versus 60%; $p = 0.057$). Patients with negative nares and stool cultures had low frequency of *S. aureus* on skin and the environment (4.8% and 11.3%, respectively).

CONCLUSION: We found that hospitalized patients with *S. aureus* nares and/or stool carriage frequently had *S. aureus* on their skin and on nearby environmental surfaces. *S. aureus* intestinal colonization was associated with increased frequency of positive skin cultures, which could potentially facilitate staphylococcal infections and nosocomial transmission.

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