Infect Control Hosp Epidemiol. 2012 Jan;33(1):3-9.
Epub 2011 Dec 7.

The antimicrobial efficacy of copper alloy furnishing in the clinical environment: a crossover study.

Karpanen TJ, Casey AL, Lambert PA, Cookson BD, Nightingale P, Miruszenko L, Elliott TS.

Source

Department of Clinical Microbiology, University Hospitals Birmingham National Health Service Foundation Trust, Birmingham, UK.

Abstract

OBJECTIVE:

To determine whether copper incorporated into hospital ward furnishings and equipment can reduce their surface microbial load.

DESIGN:

A crossover study.

SETTING:

Acute care medical ward with 19 beds at a large university hospital.

METHODS:

Fourteen types of frequent-touch items made of copper alloy were installed in various locations on an acute care medical ward. These included door handles and push plates, toilet seats and flush handles, grab rails, light switches and pull cord toggles, sockets, overbed tables, dressing trolleys, commodes, taps, and sink fittings. Their surfaces and those of equivalent standard items on the same ward were sampled once weekly for 24 weeks. The copper and standard items were switched over after 12 weeks of

sampling to reduce bias in usage patterns. The total aerobic microbial counts and the presence of indicator microorganisms were determined.

RESULTS:

Eight of the 14 copper item types had microbial counts on their surfaces that were significantly lower than counts on standard materials. The other 6 copper item types had reduced microbial numbers on their surfaces, compared with microbial counts on standard items, but the reduction did not reach statistical significance. Indicator microorganisms were recovered from both types of surfaces; however, significantly fewer coppersurfaces were contaminated with vancomycin-resistant enterococci, methicillin-susceptible Staphylococcus aureus, and coliforms, compared with standard surfaces.

CONCLUSIONS:

Copper alloys (greater than or equal to 58% copper), when incorporated into various hospital furnishings and fittings, reduce the surface microorganisms. The use of copper in combination with optimal infection-prevention strategies may therefore further reduce the risk that patients will acquire infection in healthcare environments.

Comment in

- Infect Control Hosp Epidemiol. 2012 Jan;33(1):10-3.