

O0580 Comparative assessment of the impact of disinfectant-based interventions and the use of a sink trap heating/vibration device in the bacterial colonisation of siphons of an ICU: results from the Canalis project

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Background: There is increasing awareness of the role played by the sink drains as nosocomial reservoirs. Our study investigated the impact of the use of a disinfectant-based strategy and an anti-biofilm siphon on colonization of the sinks in an ICU.

Materials/methods: Three interventions were carried out in an ICU (outbreak-free) for a 9 months period: (A) 2 sink trap heater/vibration units (Moveosiphon; Moveomed) were installed in 2 sinks; (B) in 4 sinks, keys were installed allowing to keep disinfectant in the U-trap for 2 hours; and (C) 4 sinks were subjected to disinfection, but without containment key. The disinfection was applied by using peracetic acid at 900 ppm (months 2 and 7). Water was monthly sampled from siphons. Both, direct quantitative culture and after enrichment was carried out on chromogenic selective media and TSA. Carbapenemases (CB) and ESBL production by isolates were determined by PCR and immunologic tests and clonal relationship was studied by PFGE.

Results: Mean baseline total bacterial count were similar in the three groups of sinks (2,91 log CFU/ml). Before interventions, 5 (50%) sinks were found to be colonized with CB/ESBL producers at <1 log CFU/ml (1 sink A, 3 sinks B and 1 sink C). Negative cultures were obtained 1 month after the first disinfection in sinks B and C, but regrowth was seen (increases of 1,61 log at month +2 and of 4,84 log at month +3 of total bacterial count). Two disinfectant-treated sinks reappeared positive with the same CB/ESBL strain and 2 sinks were newly colonized. A second disinfection obtained reduction of 1,24 log of total bacterial count after a month and then regrowth of 3,37 log CFU/ml. In the Moveosiphons, cultures remained <2 log CFU/ml of total bacterial count during the whole study period and no CB/ESBL producers were detected. No patient admitted in the ICU developed infections caused by CB/ESBL bacteria.

Conclusions: ICU sinks were colonized by carbapenemases/ESBL producers without producing outbreaks. The effect of punctual disinfection does not last more than 1 month, even allowing the complete flooding of U-traps, while the use of a continuous heating/vibration system is more effective.