

LIQUID HYDROGEN PEROXIDE EFFICACY COMPARED WITH STANDARD CLEANING CARE ON SURFACES DISINFECTION

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Background

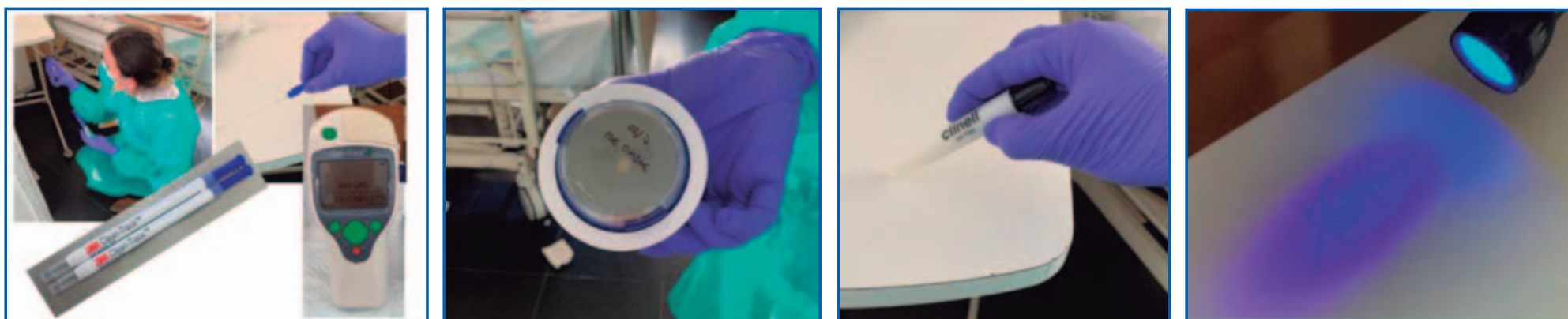
In our hospital, sodium hypochlorite is the one used product for most of the room surfaces whereas quaternary ammonium plus amines (our standard clinic care) are mostly applied to metallic surfaces, but they have disadvantages.

Methods

Pre-post quasi-experimental prospective study. We designed two phases study to compare the effectiveness of liquid hydrogen peroxide (phase 1) versus standard cleaning care (phase 2) on reducing surface contamination. Both, quantitative and qualitative evaluation of the effectiveness were assessed from February 2019-February 2020, on 5 high-touch hospital room surfaces (upper and lower surfaces of food table, call button, toilet flap and bed centre) in 2 hospitalization units (one surgical and one predominantly medical) at the University Hospital del Mar, Spain. For each surface: adenosine triphosphate (ATP), visual assessment (fluorescent marker) and aerobic colony counts (ACC) measurements were collected before and after cleaning. Mann-Whitney U test was used for assessing medians differences in the ATP and ACC. Stratified analysis by hospitalization unit, isolated status and contact surface was performed. P values lower than 0.05 were considered statistically significant

Objective

To compare the effectiveness of liquid hydrogen peroxide [Oxivir H+®] versus standard cleaning care (combination of sodium hypochlorite [Sprint H-100®] and quaternary ammonium plus amines [Sprint H-200®]) on reducing surface contaminations.



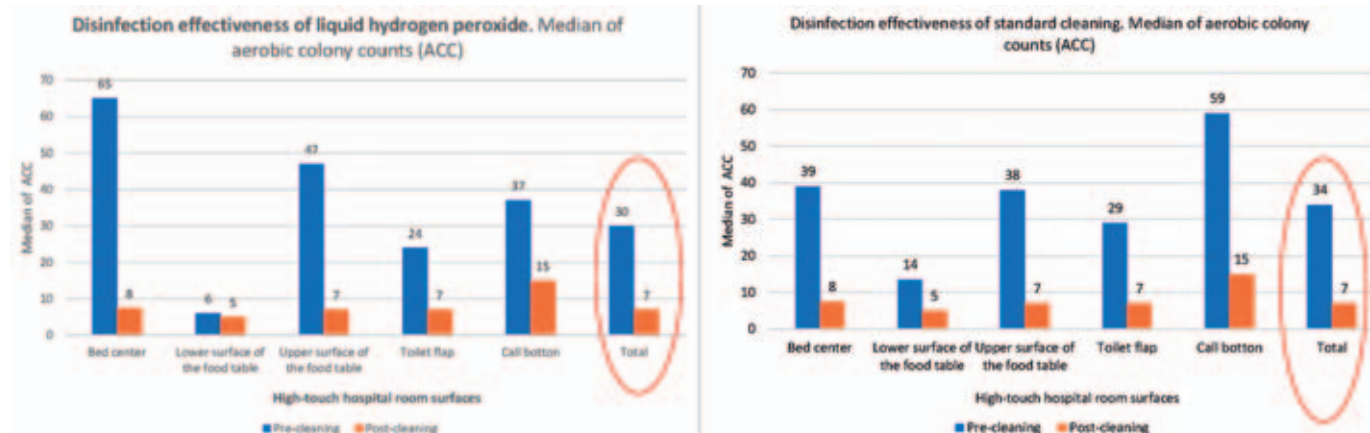
Results

We evaluated 310 surfaces: 217 from phase 1 and 93 from phase 2. Compared to post-cleaning values, pre-cleaning surfaces showed a statistically higher median of ATP relative light units (RLU) and ACC for both cleaning products: a) hydrogen peroxide: 316 vs. 52 ATP RLU, and 30 vs. 7 ACC; and b) standard cleaning 136 vs. 23 ATP RLU, and 34 vs. 5 ACC. Surfaces in the medical unit presented higher pre-cleaning RLU rates than in the surgical one but in both cases a significant reduction was achieved after cleaning with both cleaning products. Similarly, a statistically significant reduction was observed for both isolated and not isolated patients. Interestingly, not isolated patient's room's surfaces revealed higher median pre-cleaning RLU and ACC values than isolated patient's room's surfaces.

Table 1. Comparing cleaning effectiveness Hydrogen peroxide vs. Standard cleaning through the ATP Hygiene Monitoring System



Table 2. Comparing disinfection effectiveness Hydrogen peroxide vs. Standard cleaning through ACC measurement



Conclusions

Our findings are that both cleaning procedures have a similar effectiveness in cleaning and disinfection. It is important to emphasize the relevance of performing properly the processes of cleaning and disinfection of surfaces by the housekeepers.