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REMANENT EFFECT OF ANTISEPTIC SUBSTANCES ON HUMAN SKIN

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Aim: No data have been published that show the principal remanent effect of active ingredients used for the treatment of superficial infections, preoperative skin disinfection or wound antiseptic in a comparative study. Therefore, we investigated the remanent effect of PVP iodine, chlorhexidine and octenidine.

Methods: Five disinfecting solutions were tested which contained 70% (v/v) 2-propanol, 70% 2-propanol + 0.5% (w/v) chlorhexidine, 70% 2-propanol + 2% (w/v) chlorhexidine, 70% 2-propanol + 1% (v/v) PVP iodine, or 70% 2-propanol + 0.1% (w/v) octenidine dihydrochloride, respectively. The remanent effect was evaluated on upper arms of fifteen volunteers according to the DGHM guideline for skin disinfection.

Results: Ten minutes after treatment, antiseptics containing PVP iodine, chlorhexidine or octenidine had a significantly stronger impact on the microorganisms of the human skin than isopropyl alcohol without any additional active ingredient. The highest cell reduction was obtained with the alcohol solution containing 0.1% octenidine. Moreover, the regrowth of the resident flora from 10 min to 6 hours after treating the skin with that solution was very low compared to 70% isopropanol without any other active ingredients. The remanent effect of octenidine was also significantly higher than that of 0.5% chlorhexidine and 1.0% PVP iodine. The results obtained with 2.0% chlorhexidine were quite similar to those of octenidine.

Conclusions: The results demonstrate that solutions containing 2.0% chlorhexidine or 0.1% octenidine are suitable to prevent regrowth of microorganisms on skin.