

ABSTRACT

To assess the efficacy of disinfection procedures for medical instruments as a preventive and controlling measure for nosocomial infection, the examination of bacterial contamination in disinfectants by in-use test was performed in 3 selected hospitals : Panasnikom Hospital, a community hospital, Choa Praya Apaipubase Hospital, a general hospital and Maharaj Hospital, Nakornrachasema, a regional hospital and medical center. The selected disinfectants examined were chlorhexidine and combination of chlorhexidine and cetrimide (in ratio 1:10) in various use-dilutions for various purposes in each hospital. The disinfectants were sampling to examine after freshly diluted, between in use until before discarded or as diluted stock solutions. The disinfected instruments as well as water used to dilute the concentrated disinfectants were also sampling.

It was found that various use-dilution disinfectants were contaminated with some bacteria after they had been used even for 1 day if the disinfection procedures were improper. However, the contamination might not occur even when the solution had been used for 1 week if appropriate procedures were performed. The disinfected instruments which were immersed in those contaminated disinfectants were also contaminated with the same organisms. The contaminants occurred in the study were *P. cepacia*, *P. pickettii*, *Acinetobacter* spp., *Bacillus* spp., and

gram positive non-spore forming bacilli. Although these organisms were not common pathogens, but they had been reported as nosocomial pathogens from disinfectant or antiseptic utilization with increasing frequency especially *P.cepacia* and *P.pickettii*. The contamination level in some samples showed that the disinfection procedures might be regarded as unsatisfactory. The failure of disinfection procedures might be the results of various factors, e.g., inadequate concentration of disinfectant used, structure of disinfected instruments, water used to dilute the concentrated solution, including environmental factors of each hospital. Improper performance in disinfection procedures, due to misunderstanding about disinfection concept, was also an important source of bacterial contamination.