DISINFECTION EFFECT OF CIDEX, SAVLON AND H₂O₂ ON VENTILATOR TUBES

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INTRODUCTION: The most common nosocomial infection in intensive care units is pneumonia caused by endotracheal intubation and mechanical ventilation (1). The best procedure for prevention of this complication is use of suitable and proper techniques for equipment sterilization (2). The goal of this study was determination and comparison of disinfection effect of cidex, savlon and hydrogen peroxide on breathing tubes of ventilators.

METHODS: After institutional approval, this experimental trial study was done on three groups of ventilator's breathing tubes. The number of tubes in each group was 20. These tubes were used for patient's ventilation at least for one day. Immediately after disconnection of each tube from patient's airway (endotracheal or tracheostomy tube), five ml of sterile normal saline was poured in the tube from inspiratory end and the fluid was collected for microbial culture from expiratory end of the tube. This procedure was done immediately after disinfection the tubes as well. Then breathing tubes were washed with sterile normal saline perfectly. These three groups of breathing tubes were disinfected with cidex, savlon and hydrogen peroxide respectively. Samples were obtained from tubes for microbial culture on blood agar before and after disinfection. The results of microbial culturing were compared between three groups. Statistical analysis was performed with ANOVA and T pair.

RESULTS: Data (Mean± SD) are shown in the table:

Disinfectant material	Colony count		Efficacy
	Before disinfection	After disinfection	
Cidex	183.2 ± 73.1	0	100 %
Savlon	171 ± 75.4	8.6 ± 3.2	98.08%
Hydrogen peroxide	220.8 ± 72.9	0	100%

There were no significant differences between cultured colony numbers in three groups before and after disinfection.

DISCUSSION: All of the tested chemical materials had the same results in disinfection. Considering hydrogen peroxide has less adverse effects on human and environment and it is less expensive than cidex, we recommend the use of this material for disinfection of mechanical ventilator breathing tubes.

REFERENCES:

- 1) *Am J Surgery* 179:8–11
- 2) *J Hosp Infect* 37:263-72