

Effects of hydrogen peroxide mouthwash on preventing ventilator-associated pneumonia in patients admitted to the intensive care unit

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Abstract

Aims: The aim of the study was to determine the effect of hydrogen peroxide (HP) mouthwash on the incidence of ventilator associated pneumonia (VAP) in patients admitted to the intensive care unit (ICU).

Methods: This was a randomized clinical trial conducted on 68 patients. The intervention group used 3% HP as mouthwash and the control group used mouthwashes with 0.9% normal saline (NS) twice a day. Data were collected using a questionnaire and the Modified Clinical Pulmonary Infection Score (MCPIS). MCPIS includes five items, body temperature: white blood cell count, pulmonary secretions, the ratio of pressure of arterial oxygen (PaO₂) to fraction of inspired oxygen (FiO₂), and the chest X-ray. Each of these items scored 0–2. Scores ≥ 6 were considered as VAP signs. The SPSS-20 software was employed to analyze the data. **Results:** In total, 14.7% patients of the HP group and 38.2% patients of the NS group contracted VAP. The risk of VAP in the NS group was 2.60 times greater than that in the HP group (RR = 2.60, 95% CI: 1.04–6.49, $p = 0.0279$). The mean $\pm$ SD MCPIS was calculated as 3.91 ± 1.35 in the HP group and 4.65 ± 1.55 in the NS group, a difference statistically significant ($p = 0.042$). There were no significant differences in the risk factors for VAP between the two groups. **Conclusion:** HP mouthwash was found more effective than NS in reducing VAP. HP mouth-wash can therefore be used in routine nursing care for reducing VAP. © 2016 Sociedade Brasileira de Infectologia. Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Keywords: Nosocomial infection Ventilator associated pneumonia Hydrogen peroxide Intensive care unit