Category :**Respiratory: other**

A151 - ***Analysis of the clinical effects of different nebulized inhalation devices on nurses´ inhalation exposure***

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Introduction:

Secondary inhalation of medical aerosols is an important occupational hazard in clinical and domestic settings. Prolonged exposure to aerosols increases the risk and toxic effects of inhaling unnecessary medications in health care.

Methods:

This experiment measured the aerosol inhalation rate and bacterial filtration efficiency of nurses when using different nebulizer inhalation devices in conjunction with nebulizer inhalation therapy, in line with the principle of ethical harmlessness and the limitations of experimental techniques, this part of the experiment were conducted using a laboratory simulation study to observe and record the use of patients in nebulizer inhalation therapy with three different nebulizers, A, B and C, respectively, 4L/min and 8L/min. The nebulization was carried out at an oxygen flow rate of 4L/min and 8L/min respectively, the nebulization solution was 10ml of saline, the nebulization time was 15 minutes, and the number of inhaled aerosol particles of different particle sizes was measured using a dust particle counter, the number of bacteria before and after filtration was cultured using a bacterial culture dish, and the bacterial filtration efficiency was calculated.

Results:

(1) The use of nebulizers B and C during nebulized inhalation was further effective in reducing the aerosol inhalation rate of nurses compared to A normal nebulizer and C was superior to B, i.e. the anti-aerosol dispersion nebulizer was effective.

(2) The use of nebulizers B and C for nebulized inhalation is also effective in filtering bacterial microorganisms from the aerosol with >95% filtration compared to A normal nebulizer.

Conclusion:

These results will help to target improvements to nebulizers and to analyze and evaluate the use of different nebulizers for patients with respiratory diseases, providing evidence to support the selection of appropriate nebulizers for clinical patients and reducing occupational exposure of nurses.