

Heat and moisture exchanger or active humidification?

The following question was answered by a systematic review of the literature: Should heat and moisture exchanger (HME) versus active humidification (HH) be used in mechanically ventilated ICU patients?

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Humidification policies for mechanically ventilated intensive care patients and prevention of ventilator-associated pneumonia: a systematic review of randomized controlled trials.

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Abstract

The Dutch Working Party on Infection Prevention (WIP) aimed to determine whether certain humidification policies are better than others in terms of prevention of ventilator-associated pneumonia (VAP) in mechanically ventilated intensive care unit (ICU) patients. Publications were retrieved by a systematic search of Medline and the Cochrane Library up to February 2006. All (quasi-) randomized trials and systematic reviews/meta-analyses comparing humidification methods in ventilated ICU patients were selected. Two reviewers independently assessed trial quality and extracted data. If the data was incomplete, clarification was sought from original authors and used to calculate the relative risk of VAP. Data for VAP were combined in the analysis, where appropriate, using a random-effects model. Ten trials were included in the review. In general, the quality of the trials and the way they were reported were unsatisfactory. The results did not show any benefit from specific humidification techniques in terms of reducing VAP. WIP do not recommend either passive or active humidifiers to prevent VAP, nor the type of passive humidifiers to be used. Regarding active humidification, WIP recommends using heated wire circuits. This is due to the theoretical consideration that less condensate reduces colonization and subsequent risk of spread throughout an ICU when condensate is removed.