Humidification on Ventilated Patients: Heated Humidifications or Heat and Moisture Exchangers?

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Abstract

The normal physiology of conditioning of inspired gases is altered when the patient requires an artificial airway access and an invasive mechanical ventilation (IMV). The endotracheal tube (ETT) removes the natural mechanisms of filtration, humidification and warming of inspired air. Despite the noninvasive ventilation (NIMV) in the upper airways, humidification of inspired gas may not be optimal mainly due to the high flow that is being created by the leakage compensation, among other aspects. Any moisture and heating deficit is compensated by the large airways of the tracheobronchial tree, these are poorly suited for this task, which alters mucociliary function, quality of secretions, and homeostasis gas exchange system. To avoid the occurrence of these events, external devices that provide humidification, heating and filtration have been developed, with different degrees of evidence that support their use.