



Timing of tracheostomy in pediatric patients: a systematic review and meta-analysis

Background:

Tracheostomy is a very common clinical intervention in critically ill adult patients. The indications for tracheostomy procedures in pediatric patients with complex conditions have increased dramatically in recent years, but there are currently no guidelines on the optimal timing of tracheostomy in pediatric patients undergoing prolonged ventilation.

Data Sources:

We performed a systematic search of the existing literature in MEDLINE via PubMed and Embase databases and the Cochrane Library to identify clinical trials, observational studies, and cohort studies that compare early and late tracheostomy in children. The date of the last search was August 27, 2018. Included articles were subjected to manual searching.

Study Selection:

Studies in mechanically ventilated children that compared early with late tracheostomy were included.

Data Extraction:

Data were extracted into a spreadsheet and copied into Review Manager 5.3 (The Cochrane Collaboration, Copenhagen, Denmark).

Data Synthesis:

Data were meta-analyzed using an inverse variance, random effects model. Continuous outcomes were calculated as mean differences with 95% CIs, and dichotomous outcomes were calculated as Mantel-Haenszel risk ratios with 95% CIs. We included eight studies (10 study arms). These studies were all retrospective cohort studies. Early tracheostomy was associated with significant reductions in mortality, days on mechanical ventilation, and length of intensive care and total hospital stay, although the lack of randomized, controlled trials limits the validity of these findings. Although variance was imputed for some studies, these conclusions did not change after removing these studies from the analysis.

Conclusions:

In children on mechanical ventilation, early tracheostomy may improve important medical outcomes. However, our data demonstrate the urgent need for high-quality, randomized controlled trials in the pediatric population.



نوع البحث:

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