

INPLASY

Incidence of Laryngospasm Between the Use of Laryngeal Mask Airway and Endotracheal Tube in Paediatric Adenotonsillectomy: A Systematic Review

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ADMINISTRATIVE INFORMATION

Support - This study does not receive any financial support.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 June 2024 and was last updated on 22 June 2024.

INTRODUCTION

Review question / Objective To compare the use of laryngeal mask airway and endotracheal tube on the incidences of laryngospasm in paediatric adenotonsillectomy.

Rationale Adenotonsillectomy is one of the most common surgical procedures in pediatric otorhinolaryngology. While endotracheal intubation (ETT) has long been the standard of treatment for pediatric anaesthesia, the laryngeal mask airway (LMA) has emerged as a popular option for airway management since its inception. However, it is unclear which airway management strategy causes less laryngospasm.

Condition being studied Adenotonsillectomy is one of the most common surgical procedures performed in pediatric otorhinolaryngology [1,2].

Impaired nasal breathing, recurrent otitis media, recurrent upper airway infections, and obstructive sleep apnea are all possible indications [3,4]. The primary treatment is surgical excision of adenoid tissue. Ensuring safe and effective airway control is critical in paediatric anaesthesiology, particularly during adenotonsillectomy, because manipulating the surrounding tissues increases the risk of laryngospasm, which can be fatal.

METHODS

Search strategy A comprehensive literature search will be conducted with five electronic databases, including PubMed, Embase, Scopus, Cochrane Library and Web of Science from their inception until February 2024. The following search string will be used: (“Laryngospasm” OR “Laryngeal Spasm”) AND (“Paediatrics” OR “Pediatrics” OR “Children”) AND

("Adenotonsillectomy" OR "Adenotonsillectomies") AND ("Laryngeal mask airway" OR "Laryngeal mask" OR "Supraglottic Airway") AND ("Endotracheal tube" OR "Intubation"). A manual search will be performed to retrieve additional records from the reference list of included studies and relevant review papers.

Participant or population Paediatric patients (aged 1-18 years) who underwent adenotonsillectomy procedures under general anaesthesia.

Intervention The use of LMA and ETT in adenotonsillectomy.

Comparator Not available.

Study designs to be included Randomised controlled trials (RCTs) and cohort studies.

Eligibility criteria Studies with the following characteristics were excluded: (1) lacking sufficient data on the outcomes relevant to the research question; (2) not comparing LMA and ETT directly, and (3) not separating the paediatric population from the overall cohort.

Information sources 1. Electronic databases: PubMed, Embase, Scopus, Cochrane Library and Web of Science. 2. Reference list of included studies and relevant review papers.

Main outcome(s) Incidences of laryngospasm.

Data management The complete search results from each database will be downloaded into Endnote version 9X (Clarivate, Philadelphia, USA) and de-duplication will be conducted using features in Endnote and assessed again manually.

Quality assessment / Risk of bias analysis The included studies will be appraised using the Newcastle-Ottawa Quality Assessment Scale for Randomised Controlled Trials (RCTs) and Cohort Studies. Case selection, comparability and exposure will be ascertained using a grading score to assess the risk of study bias.

Strategy of data synthesis The outcomes will be described qualitatively.

Subgroup analysis No subgroup analysis has been planned at this stage.

Sensitivity analysis No sensitivity analysis has been planned at this stage.

Language restriction Only articles written in English will be considered.

Country(ies) involved Malaysia (Department of Anaesthesiology and Intensive Care, Department of Anaesthesiology and Intensive Care, Faculty of Medicine, Universiti Kebangsaan).

Keywords laryngospasm; paediatric; adenotonsillectomies; laryngeal mask airway; endotracheal intubation.

Dissemination plans The systematic review will be published in a scientific journal for dissemination.

Contributions of each author

Author 1 - Kevin Zi Kai Ooi - Author 1 will perform the systematic literature search, article screening, data extraction and manuscript drafting.

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Author 2 - Rufinah Teo - Author 2 conceptualised the project and supervised the students. She will also validate the results of article screening and provide critical review of the manuscript.

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Author 3 - Kok-Yong Chin - Author 3 will perform the systematic literature search, article screening, data extraction and critical review of the manuscript.

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