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## SCIENTIFIC ARTICLE

# Comparison of sevoflurane concentration for insertion of proseal laryngeal mask airway and tracheal intubation in children (correlation with BIS)<sup>☆</sup>



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### KEYWORDS

Sevoflurane;  
Proseal laryngeal  
mask airway;  
Endotracheal tube;  
Bispectral index  
monitor

### Abstract

**Background:** Sevoflurane is an inhalational agent of choice in paediatric anaesthesia. For management of airways in children a suitable alternative to ETT is a paediatric proseal laryngeal mask airway (benchmark second generation SAD). Various studies have shown that less sevoflurane concentration is required for LMA insertion in comparison to TI. BIS is a useful monitor of depth of anaesthesia.

**Aims:** To compare concentration of sevoflurane (end tidal and MAC value) required for proseal laryngeal mask airway insertion and tracheal intubation in correlation with BIS index.

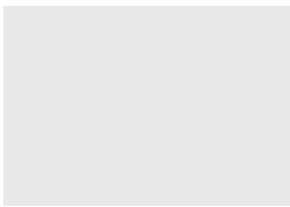
**Method:** The prospective randomised single blind study was done in children between 2 and 9 years of ASA I and II and they were randomly allocated to Group P (proseal laryngeal mask airway insertion) and Group TI (tracheal intubation). No sedative premedication was given. Induction was done with 8% sevoflurane and then predetermined concentration was maintained for 10 min. Airway was secured either by proseal laryngeal mask airway or endotracheal tube without using muscle relaxant. End tidal sevoflurane concentration, MAC, BIS, and other vital parameters were monitored every minute till insertion of an airway device. Insertion conditions were observed. Statistical analysis was done by ANOVA and Students *t* test.

**Results:** Difference between  $ET_{LMI}$  ( $2.49 \pm 0.44$ ) and  $ET_{TI}$  ( $2.81 \pm 0.65$ ) as well as  $MAC_{LMI}$  ( $1.67 \pm 0.13$ ) and  $MAC_{TI}$  ( $1.77 \pm 0.43$ ) was statistically very significant, while  $BIS_{LMI}$  ( $49.05 \pm 10.76$ ) and  $BIS_{TI}$  ( $41.25 \pm 3.25$ ) was significant. Insertion conditions were comparable in both the groups.

<sup>☆</sup> Study done at Department of Anaesthesiology, Medical College and SSG Hospital, Vadodara, India.

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*Conclusion:* We can conclude that in children airway can be secured safely with proseal laryngeal mask airway using less sevoflurane concentration in comparison to tracheal intubation and this was supported by BIS index.

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