



## A study between comparison of ketamine and lidocaine with propofol for laryngel mask airway insertion.

### KEYWORDS

Lidocaine, laryngel mask airway, propofol, ketamine

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### ABSTRACT

**Background:** The insertion of LMA requires sufficient depth of anaesthesia for the jaw muscles to relax and the inserted LMA to be tolerated without undue coughing, gagging, breath holding and patient movement. A number of induction agents and adjuncts have been tried to facilitate smooth insertion of LMA. **Materials and Methods:** In this study, 100 cases were taken and made two groups. One group of ketamine and lidocaine spray and other group of propofol for LMA insertion. Study was done in Anaesthesia department of JLNMC, Bhagalpur, Bihar from October 2015 to September 2016. The group included both males and females. **Results:** Treatment with lidocaine spray and ketamine is better than propofol for the insertion of LMA because spontaneous ventilation is maintained and the airway is secured.

### Introduction-

Laryngospasm is a serious complication of general anaesthesia that is known to occur most often at induction of anaesthesia, during tracheal intubation and at extubation. The reported frequency of laryngospasm during general anaesthesia is between 1.7% and 25% in children. Laryngospasm causes complete obstruction of the upper airway and can lead to oxygen desaturation, negative pressure pulmonary oedema and death, and its prevention during general anaesthesia is challenging. Being a standard and widely accepted supraglottic airway device for airway management in children, laryngeal mask airway (LMA) has been commonly used in the field of pediatric anaesthesia since 1990. LMA insertion, however, is not always achieved easily, a gentle technique is of great importance throughout this procedure. Appropriate anaesthetic depth along with sufficient muscle relaxation is required to prevent complications such as cough, struggling, laryngospasm, and patient movement.

The laryngeal mask airway (LMA) may provide a better airway, with respect to ventilation and oxygenation, than a conventional mask and oropharyngeal airway. In addition, the LMA has been successfully used to manage difficult airways as a ventilatory device by itself and as a conduit for tracheal intubation.

The aim was to evaluate the effectiveness of lidocaine spray and IV ketamine with propofol.

Laryngospasm was graded as none, mild (spontaneous relief), moderate (relieved by applying positive pressure through LMA), or severe (relieved by succinylcholine administration). Coughing, gagging, swallowing, and tongue movement were graded as absent, minimal, moderate, or severe.

### Materials and methods

In this study, 100 cases were taken and made two groups. One group of ketamine and lidocaine spray and other group of propofol for LMA insertion. Study was done in Anaesthesia department of JLNMC, Bhagalpur, Bihar from October 2015 to September 2016.

### Inclusion criteria-

Children aged from 3 to 12 yr, who appeared to have normal airways by examination and history, were studied during elective surgical procedures that ordinarily involve tracheal intubation.

### Exclusion criteria-

Those who were >20% different from the ideal body weight for their height and those with neuromuscular or psychiatric disease, seizure disorder, upper respiratory tract infection, or a history of allergy or asthma were excluded.

Patients were randomly allocated into two main groups.

Group 1- Treatment with ketamine and lidocaine spray

Group 2- Treatment with propofol

LMA insertion conditions were assessed using six variables on a 3 point scale as follows

1. Resistance to mouth opening - no/significant/undue force required
2. Resistance to insertion - easy/difficult/impossible
3. Swallowing - nil/slight/gross
4. Coughing/gagging - nil/slight/gross
5. Limb/head movements - nil/slight/gross
6. Laryngospasm - nil/partial/total

### Results

There were no significant differences between groups in age or body weight distribution. There was no difference in the incidence of resistance to mouth opening in both the groups. Pain on injection was seen in 65% of the propofol group; in 1 patient, it was severe; in 10, moderate; and in 18, mild. During ketamine injection with lidocaine spray, however, the incidence of mild pain was only 10%. All the systolic and diastolic blood pressures of the ketamine subgroups were higher than those of the propofol subgroup. For children treatment with lidocaine spray and ketamine is better than propofol for the insertion of LMA because spontaneous ventilation is maintained and the airway is secured. The combined results demonstrated a statistically significant reduction in the incidence of laryngospasm in patients who received lidocaine and ketamine.

### Discussion-

Smooth insertion and correct positioning of an LMA requires adequate mouth opening and sufficient depth of anaesthesia to prevent complications such as gagging, coughing, swallowing, head and limb movements and laryngospasm.<sup>12</sup> Traumatic LMA insertion also increases post operative sore throat. For children pretreatment with lidocaine spray and ketamine may be better than propofol for the insertion of LMA because spontaneous ventilation is maintained and the airway is secured. The LMA can be used as a routine airway and as a conduit for tracheal intubation during difficult airway management. Passage of a fiberoptic bronchoscope through an LMA is nearly 100% successful in most studies, and LMA insertion seems to be easier than any other airway-maintaining method. Ketamine after pretreatment with lidocaine spray may be a good approach to LMA insertion for the management of difficult airway in children.

### Conclusion-

Lidocaine spray and ketamine is better than propofol for the insertion of LMA in children with rapid onset of action and lower

incidence of injection pain. It provided better LMA insertion conditions, improved hemodynamic stability with less prolonged apnea when compared to propofol.

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