

Survey of Practice Patterns of Airway Management: A Comparison between Academic and Nonacademic Setups in Karnataka

Ananth Somayaji, U. S. Raveendra

Department of Anaesthesiology, K.S. Hegde Medical Academy, Mangalore, Karnataka, India

Abstract

Background: Airway management is a core skill for an anaesthesiologist. However, the patterns of airway management practice vary among different practitioners, institutions, hospitals, and regions in India. In view of the limited literature in this regard, a survey was undertaken to assess different airway approach among anaesthesiologists of Karnataka. **Materials and Methods:** This was a prospective survey of 300 anaesthesiologists from Karnataka of varying backgrounds, from freelancers to academic departments. A prospective four-part questionnaire with 30 questions was sent to individual anaesthesiologists. Information was collected and data analyzed for demographic data, type, and preference of airway techniques and devices, availability of support, training, and complications. **Results:** i-gel was the most commonly used supraglottic airway device (SGAD) across age groups. There were significant differences in choice of drugs for insertion of SGAD among practitioners and academic consultants. For intubations, Vecuronium was preferred for adult patients, while Atracurium for children. The most common complication reported was desaturation and bradycardia (46%) in children. **Conclusion:** Survey shows differences in the practice patterns between academic and freelance setups in terms of device, technique, and drugs used. There appears to be a need to address the reasons for this difference.

Keywords: Airway practice patterns, difficult airway, laryngeal mask airway, supraglottic airway device

INTRODUCTION

Difficulty with airway management for anaesthesia has grave implications, as failure to protect a patent airway can result in hypoxic brain injury or death. Difficulty may occur with facemask ventilation, placement of a supraglottic airway (SGA), laryngoscopy, and tracheal intubation. Recent advancements in SGA have revolutionized the practice in anaesthesia and airway management. However, the patterns of airway management practice vary among different practitioners, institutions, hospitals, and regions in India.

Aim

To assess the airway practice patterns between academic and nonacademic anaesthesiologists.

Objectives

1. To analyze the different airway approaches among anaesthesiologists

2. To compare the practice patterns among academic and nonacademic anaesthesiologists.

MATERIALS AND METHODS

Study design

A prospective analytical study.

Study population

A prospective survey of 300 anaesthesiologists (MD/DA/DNB/DM) of Karnataka from varying backgrounds, from freelancers to academic departments.

Academic anaesthesiologists included the ones working as part of a medical college or teaching institute and involved

Address for correspondence: Dr. Ananth Somayaji,
Department of Anaesthesiology, K.S. Hegde Medical Academy,
Mangalore, Karnataka, India.
E-mail: ashishks1@gmail.com

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in teaching and medical research along with routine clinical work.

The nonacademic or freelancer anaesthesiologists, on the other hand, included the ones working at private or corporate setups where there is no teaching or research work involved.

Sample size

Three hundred anaesthesiologists practicing in different areas of Karnataka.

Inclusion criteria

- Anaesthesiologists from academic setups: 3–5 Anaesthesiologists from each department randomly selected from different designations
- Freelance anaesthesiologists of Karnataka.

Exclusion criteria

- Trainees, postgraduate, and senior residents of anaesthesiology.

Study tools

A four-part questionnaire with 30 questions was sent to individual anaesthesiologists.

Procedure

- After institutional Ethical Committee clearance, around 350 questionnaires were distributed by post and a few were hand-delivered to anaesthesiologists in different settings (medical colleges, private hospitals, nursing homes, etc.) (50 questionnaires more than the sample size were distributed foreseeing nonresponse from a few)

Out of the 319 forms collected, 300 completely filled questionnaires were taken into consideration for statistical analysis

The following data were collected from the survey participants:

- Demographic data (age, sex, degree, type, and duration of practice and total average no. of patients anaesthetized per month)
- Their approach for endotracheal intubation, use of SGA, and pediatric airway practice.

Statistical analysis

Data collected were analyzed for demographic statistics, type, and preference of airway techniques and devices, availability of support, training, and complications. Data were tabulated using Microsoft Excel 2010 software (Microsoft Office 2010 version 14) and analyzed with Statistical Package for the Social Sciences (SPSS) 15.0 for Windows (SPSS Inc., Chicago, IL, USA). Parametric data were presented as mean ± standard deviation.

Ethical considerations

It was a survey to assess the airway management of practicing anaesthesiologists for academic reasons. Hence, there were no ethical issues.

RESULTS

Out of all the survey forms distributed for data collection, 300 completed forms were assessed and the baseline clinical and demographic data collected is as shown in Table 1.

Preferred supraglottic airway device

i-gel was found the most commonly used and preferred supraglottic airway device (SGAD) among academicians, while Classic laryngeal mask airway (LMA) was preferred among freelancers [Table 2].

Choice of drugs

There were significant differences in choice of drugs for insertion of SGAD among practitioners and academic consultants as shown in Table 3.

Table 1: Demographic data

	Number (%)
Age (mean age 44±6 years)	
30-40 years	75 (25%)
41-50 years	215 (71.66%)
51 and above	10 (3.33%)
Sex	
Male	212 (70.66%)
Female	88 (29.33%)
Qualification	
MD	184 (61.33%)
DA	64 (21.33%)
DNB	58 (19.33%)
DM	14 (4.66%)
Experience	
<10 years	135 (45%)
>10 years	165 (55%)
Type of practice	
Academic	155 (51.66%)
Nonacademic	145 (48.33%)
Average no. of patients anaesthetized per month	
<30	20%
>30	80%
Percentage of patients who receive general anaesthesia (out of total number of anaesthetized patients)	
Academic	30
Nonacademic	20

Table 2: Availability and usage of SGAD

Supraglottic airway device	Academic n (%)	Freelance n (%)
Availability		
Classic	6 (3.87)	116 (80)
i-gel	136 (87.74)	14 (9.6)
Ambu	7 (4.51)	13 (8.96)
LMA	0	0
Flexible LMA	0	0
ProSeal LMA	5 (3.22)	0
Total	155	145

For endotracheal intubations, Vecuronium was preferred for adult patients, while Atracurium for children [Table 4]. No other noteworthy differences were found in intubation practices between the two groups.

The most common complication reported was desaturation and bradycardia (46%) in children [Table 5].

DISCUSSION

Studies comparing airway management among academic and nonacademic anaesthesiologists are not commonly done and data regarding the same are scarce. In this study an attempt was made to assess the practice patterns in the management of difficult airway and to make a comparison between the two setups of work.

Kadar *et al.* in 2015 conducted a survey to assess practices of SGAD use in South India.^[1] In their study, it was found that the most common SGAD used was Classic LMA, followed by ProSeal, whereas our survey found that i-gel was the most commonly used and preferred SGAD among academicians, while Classic LMA was preferred among freelancers.

	Academic (n)	Freelancers (n)
Propofol	88	44
Succinylcholine	13	62
Nondepolarizing muscle relaxant	54	39
Total	155	145

	Academic (n)	Freelancer (n)
Fentanyl with propofol	152	135
Thiopentone	03	10
Succinylcholine (adults/pediatric)	0/23	22/64
Nondepolarizing muscle relaxant		
Atracurium (adults/pediatric)	44/82	49/59
Vecuronium (adults/pediatric)	111/50	74/22

	Academic n (%)	Freelancer n (%)
Age		
<12 years	46 (70.76)	30 (66.66)
<6 years	10 (15.38)	13 (28.88)
<2 years	9 (13.84)	2 (4.44)
Complications seen in last one year of practice with pediatric patients		
Desaturation and bradycardia	51 (46.3)	
Laryngospasm	10 (9.09)	
Postoperative bleeding	5 (4.54)	
Inadequate reversal	1 (0.9)	
Total	65	45

i-gel, a SGAD, has many suitable characteristics such as its soft noninflatable cuff, which provides a suitable fit over the laryngeal inlet by molding according to the perilaryngeal anatomy.^[2] Many authors have reported successful use of i-gel during emergency settings of a difficult airway. Choi *et al.* in 2015 reported successful tracheal intubation through the use of i-gel and a fiberoptic bronchoscope on a patient with a difficult airway.^[3]

Our survey found that most anaesthesiologists prefer nondepolarizing muscle relaxants for intubation, and propofol and succinylcholine for insertion of SGAD. Similarly, Kadar *et al.* in their study made a note of majority using anticholinergic premedication and neuromuscular blocking agents for insertion of SGAD, despite the conventional guidelines suggesting LMA insertion with spontaneous ventilation only without the aid of muscle relaxants or other drugs.^[1,4,5]

Comparisons between the academic anaesthesiologists and freelancers on their practice patterns, drugs of choice in different settings, and complications encountered are scarce, and this study serves as a pilot for further surveys of this sort.

CONCLUSION

Survey shows differences in the practice patterns between academic and freelance setups in terms of device, technique, and drugs used. i-gel was the preferred SGAD among academic anaesthesiologists while the freelancers preferred Classic LMA. The drug of choice for intubation among academic anaesthesiologists was succinylcholine and among freelancers it was nondepolarizing muscle relaxants. The most common complication encountered was desaturation and bradycardia among both types of practitioners. There appears to be a need to address the reasons for these differences among academic and nonacademic anaesthesiologists. Further surveys are needed to compare the management patterns and outcomes to generate the best protocols for different settings to enhance patient care.

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Conflicts of interest

There are no conflicts of interest.

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