Comment on published original article – Comparison of endotracheal intubation, laryngeal mask airway, and I-gel in children undergoing strabismus surgery

Sir,

I read with great interest an article published in your esteemed journal – "Comparison of endotracheal intubation, laryngeal mask airways, and I gel in children undergoing strabismus surgery." We commend the authors for introducing a novel idea of measuring intraocular pressure (IOP) and secondary hemodynamic response to the insertion of three airway devices, and we compliment the authors for carrying out this novel research. However, we feel that there are some pitfalls in methodology and minor problems in the dissertation that must be addressed.

The institutional ethical acceptance or the CTRI registration of the manuscript could not be tracked in the published manuscript.[1] Considering the power of 80% and the error rate of type I of 5%, the sample size was estimated to be 90 children who were candidates for strabismus surgery, but no reference to previous studies is made to the power calculation basis.[1] Such estimation of the sample size formula requires more thorough inference. A simple random sample of size "n" is generated by a strategy that guarantees that each subgroup of the population of size "n" has the same probability of being selected as a sample. The methodology used to produce simple random sampling was not correctly indicated by the authors, e.g. random number table, lottery system.[1] Exclusion criteria included glaucoma, history of intraocular surgery, heart and lung disease, diabetes, body mass index >3 kg/m^2, anatomical defect in the mouth and larynx, and airway obstruction.[1] It is believed that the authors included patients with upper respiratory tract infection at risk of gastroesophageal regurgitation, with airway-related conditions such as trismus, reduced mouth opening secondary to a pharyngeal abscess, trauma, or mass. It would have been worth considering the subgroup analysis of those with these inclusions in the study and discussion. At its conclusion, were all the patients who joined the trial adequately accounted for? There is no mention of the enrolment procedure and the dropout rate is also not provided.[1]

The authors suggested that oral midazolam (0.33 mg/kg) was used for sedation before surgery, and it would have been worth mentioning the dissolving agent and the total amount given.[1] A broad range of additives has been used, with the precise choice being a matter of local experience and inclination. This variation has resulted in formulations that vary from practice to practice in terms of composition, active drug concentration, and pH. The issue with injectable midazolam is that it is very bitter. Authors in the past have used fruit juice, honey, etc., as a carrier and are well accepted by most of their subjects. Feld *et al*. also recorded superior anxiolysis 30 min after a 0.75 mg/kg oral dose of midazolam compared to 0.25 mg/kg and 0.5 mg/kg doses or placebo. However, other research found the dose of 0.5 mg/kg to be the most effective.[2] McMillan *et al*. reported no additional benefit but more side effects for both 0.75 mg/kg and 1.0 mg/kg doses relative to the 0.5 mg/kg dose.[3] Overall, the volume of premedication drug may have an effect on gastric volume, including time of administration of induction agent and dosage of benzodiazepine; it would have been worthwhile mentioning such details in methodology.[1] General anesthesia was administered by injection of propofol (3 mg/kg), remifentanil (1 mg/kg), and atracurium (0.4 mg/kg). After 3 min, depending on the patient's category, endotracheal tube (ETT), laryngeal mask airway (LMA), or I-gel were inserted, and IOP and hemodynamic variables were calculated and documented. This research was performed on 90 children with an average age of 5.68 years.[1] Although inhalation induction has historically been the preferred induction technique in children, intravenous induction is becoming increasingly common. We have doubts regarding the degree of anxiety experienced in this parent study by Allahyari *et al*. during intravenous cannula insertion.[1] Small children in the included age group (3–8 years) are very uncooperative, nervous and may not allow cannulation. Inducing a crying child, with anxiety and pain, may indirectly have an impact on IOP measurement and may misinterpret the outcomes. Patient cooperation is a major concern in this technique. It is said that "there was not any difference in the cost of these three methods for the patients;" however, it is known that supraglottic devices are much costlier than ETTs. Another problem is that

the authors have not discussed differences in the size of the LMA used, which may affect the hemodynamic and IOP, which are the key variables noted by the authors. The size of LMA and volume of air used to inflate the cuff may affect the hemodynamic response calculated as the primary objective of this analysis.[4] Laryngoscopy was performed for Endo Tracheal Tube (ETT) insertion and induces stress response; however, supraglottic airway devices such as LMA and I gel do not induce a similar stress response. However, the findings show that hemodynamic changes are similar in the ETT and LMA groups and different in I gel, underlining the prejudice for the I gel group. There are also flaws in English use, making it difficult for readers to understand, e.g. phrases such as trachea in trachea, soft and loose mode, and loss of consciousness.

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Conflicts of interest
There are no conflicts of interest.

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