PERIOPERATIVE COMPLICATIONS: IN CHILDREN UNDERGOING ELECTIVE SURGERIES WITH GENERAL ANAESTHESIA

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Background: Perioperative adverse events in children are one of the major causes of morbidity and mortality. Incidence of undesirable outcome is more common in pediatric patients compared to an adult.1

Objectives: To find out the type and the frequency of perioperative adverse events in children, undergoing elective surgeries under GA.

Methods: Study was conducted in 156 ASA PS III patients, day 1 to 15 yrs, undergoing elective surgeries with GA, over a period of 4 months at BP KIHS, Dharan, Nepal.

Patients with cardiac diseases, respiratory tract infection, risk of aspiration with LMA insertion, and the duration of surgery >120 min were excluded.

Induction was done with inj. Pethidine, inj. Propofol, halothane and oxygen. After induction, LMA was inserted. HR, BP, Spo2, ECG, ET Co2 was monitored continuously. Maintenance of anesthesia was done with O2 and halothane.

After completion of surgery, LMA was removed when the patient still was in a deeper plane of anesthesia. Spontaneously breathing patient with stable vital signs was shifted to the recovery room in lateral position.

Complication observed during intraoperative and in the postoperative period, until 30 min after removal of LMA, was documented.

ABSTRACT

Results: Majority of our patients 91%(58%) were male. General surgery was the most common procedure performed in 108(69%) patients. The most common age group involved was 6-10 (35%) years. Respiration event represented 52%, cardiac events represented 38% and nausea and vomiting represented 10%. All the perioperative events Respiration events were significantly high in children <5 year of age and cardiac events were significantly high in children > 5 years of age (p=0.004). Nausea and vomiting occurred only in the postoperative period in children > 5yrs. Complications were significantly high in children undergoing orthopaedic surgeries (p=0.002).

Conclusion: Respiratory adverse event was the most common event occurring in the perioperative period. There is a risk of perioperative adverse event in 16.6% of children undergoing elective surgery under GA.

REFERENCES


RESULTS

- Out of 156 patients, 91(58%) were male. The mean weight and duration of surgery were 21.4 ± 9.7 kg and 51.3 ± 13.3 minutes.

Table-1. Distribution of age and surgical procedure

<table>
<thead>
<tr>
<th>Surgical procedure (no of patients)</th>
<th>Age(years) distribution of patients (no. of patients)</th>
<th>0-1</th>
<th>2-5</th>
<th>6-10</th>
<th>11-15</th>
<th>16-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>General surgery (108)</td>
<td></td>
<td>9</td>
<td>36</td>
<td>35</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Ophthalmic (23)</td>
<td></td>
<td>12</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Orthopaedic (20)</td>
<td></td>
<td>6</td>
<td>13</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENT (5)</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
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</tr>
</tbody>
</table>

- Respiratory events were significantly high in children <5 year of age and cardiac events were significantly high in children > 5 years of age (p=0.004). Nausea and vomiting occurred only in the postoperative period in children > 5yrs.

- Complications were significantly high in children undergoing orthopaedic surgeries (p=0.002).

DISCUSSION

- Respiratory to be the most common perioperative adverse event in children has been reported earlier.2-4 Murat et al found that the commonest incident intraoperatively or in PACU in children involved the respiratory system.4

- Respiratory event, in our study was significantly high in children <5 years of age. Higher incidence of respiratory event in younger children was also found by Murat et al.4 Young age is known to be a risk factor for respiratory events.3 The risk of perioperative respiratory adverse event is known to decrease by 8% with each increasing year of age.

- Cohen et al.5 also found more cardiac complications than respiratory, in the intraoperative period specially, in older children. However, respiratory complications were more frequent in the intraoperative period in a study by Murat et al.4 Use of halothane during anesthesia has also been associated with an increase risk of cardiac complications.

- Observation of cardiac complications in older children in this study is similar to the finding of Cohen et al.5

- Nausea and vomiting is known to be a common complication in older children in the postoperative period,6-7 with peak incidence in 11-14 years, were more frequent with the puberty.6-7

- The risk of perioperative adverse event in 16.6% of our patient is less compared to the previous risk of 35%.6 Exclusion of patients with higher ASA physical status and patients undergoing emergency surgeries could be the possible explanation, as they are the major risks for perioperative complications.8,9

- Significantly higher complications in children undergoing orthopaedic surgery in our study is in contrast to the earlier finding, in which ENT surgery was found to be the risk.1,4

SMALLER SAMPLE SIZE AND INCLUSION OF THE PATIENTS WITHOUT RANDOMIZATION ARE THE MAIN LIMITATION OF OUR STUDY.