Intranasal Dexmedetomidine Versus Oral Midazolam as Premedication in Anaesthesia in Children

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ABSTRACT
Only patients belonging to ASA I & II were chosen for the study. There was mild reduction in heart rate after administration of intranasal dexmedetomidine compared to oral midazolam. Sedation score of 3 and 4 were 73% in Group A whereas 30% in Group B (Oral Midazolam). At 20 mins, 60% were achieving score of 1 & 2 in Group A whereas 16% in Group B. At 30 mins, score 1 and 2 was about 80% in Group A and 43% in Group B. Behaviour Scores of 1 and 2 at 10, 20 30 mins in Group A were 37%, 74%, 83% and 17%, 43%, 57% for Group B.

Key words: Dexmedetomidine, Midazolam, Premedication

INTRODUCTION
Midazolam is a very common preanesthetic medication which is replaced by Dexmedetomidine an alpha-2 agonists in recent years. Many clinical trials have been performed to determine the efficacy of dexmedetomidine versus midazolam. But still no promising evidence are achieved to prove which agent is superior over other. Therefore, this study was conducted to compare efficacy & clinical effects of intranasal dexmedetomidine and oral midazolam as a preanaesthetic medication in children undergoing minor elective surgery [1-3].

METHODOLOGY
Children of age group of 2- to 12-year-old was taken for the study and categorized in to two groups Group A were administered with intranasal dexmedetomidine with a dosage of 1 µg/kg body weight, 45 minutes prior to surgery and Group B with Oral Midazol of 0.5mg/kg body weight in 10 ml apple juice 30 minutes before surgery. After which the patient’s blood pressure, heart rate, oxygen saturation was recorded at induction of anaesthesia. Sedation was assessed every 10 minutes with 6 point Modified observer’s assessment of alertness / sedation scale. Behavioral changes and hemodynamic changes were also assessed.

RESULTS
The baseline values of heart rate, systolic blood pressure & oxygen saturation were similar and is comparable in both the groups (Tables 1 and 2). But while transferring to operation theatre, the heart rate of Group A (Intranasal dexmedetomidine) was significantly low on comparison with Group B (Oral midazolam). There was no statistically significant difference in systolic blood pressure and oxygen saturation between both groups on shifting to operation theatre.

Table 1: Comparison of heart rate, systolic blood pressure & oxygen saturation between Group A (Intranasal dexmedetomidine) and Group B (Oral midazolam).

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group A (intranasal dexmedetomidine)</th>
<th>Group B (Oral Midazolam)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistical values</td>
<td>Baseline</td>
</tr>
<tr>
<td>Heart rate</td>
<td>Mean</td>
<td>90.3</td>
</tr>
<tr>
<td></td>
<td>S.D</td>
<td>3.58</td>
</tr>
<tr>
<td></td>
<td>Standard error mean</td>
<td>0.654</td>
</tr>
</tbody>
</table>
Table 2: Comparison of heart rate, systolic blood pressure & oxygen saturation between Group A (Intranasal dexmedetomidine) and Group B (Oral midazolam).

<table>
<thead>
<tr>
<th>GROUP</th>
<th>Heart rate (beats/min)</th>
<th>Systolic Blood Pressure(mmHg)</th>
<th>Oxygen Saturation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>At O.T</td>
<td>Baseline</td>
</tr>
<tr>
<td>Group A (intranasal dexmedetomidine)</td>
<td>91±6</td>
<td>86±6</td>
<td>95±7</td>
</tr>
<tr>
<td>Group B (oral midazolam)</td>
<td>91±5</td>
<td>90±5</td>
<td>94±7</td>
</tr>
</tbody>
</table>

**DISCUSSION AND CONCLUSION**

Midazolam is a versatile drug in general anaesthesia, but it is not ideal drug for premedication because of its adverse effects of restlessness, paradoxical reaction, negative postoperative behavioural changes. When comparing the effect of this drug with another similar agent like dexmedetomidine, the sedation scores at 10, 20 and 30 minutes are better with intranasal dexmedetomidine, which are statistically significant (p value is 0.0082, 0.0487 and 0.0351 respectively). The post-operative agitation was less with intranasal dexmedetomidine than with oral midazolam like study done by Schmidt et al. [4-9].

**REFERENCES**