A COMPARISON BETWEEN DEXMEDETOMIDINE INFUSION AND PROPOFOL INFUSION AS AN ADJUVANT TO LOCAL ANAESTHESIA IN PATIENTS UNDERGOING TYMPANOPLASTY SURGERIES

Praveen Chowdary Buddi¹, Rama Krishna Prasad Katuri², A. S. Kameswara Rao³, S. Gopala Krishna Murthy⁴, Anandha Acharya⁵

¹Postgraduate Student, Department of Anaesthesiology, KIMS & RF, Amalapuram, Andhra Pradesh.
²Postgraduate Student, Department of Anaesthesiology, KIMS & RF, Amalapuram, Andhra Pradesh.
³Dean and Professor, Department of Anaesthesiology, Critical Care & Pain Medicine, KIMS & RF, Amalapuram, Andhra Pradesh.
⁴Professor and HOD, Department of Anaesthesiology, KIMS & RF, Amalapuram, Andhra Pradesh.
⁵Vice Principal and Professor, Department of Pharmacology, KIMS & RF, Amalapuram, Andhra Pradesh.

ABSTRACT

BACKGROUND

The objectives of this study was to compare effects of dexmedetomidine infusion and propofol infusion in patients undergoing tympanoplasty surgeries under local anaesthesia. Propofol is commonly used in various surgeries, it causes hypnosis, sedation, amnesia, antiemetic action but has disadvantages like apnoea, myocardial depression. Dexmedetomidine is a newer drug it produces sedation, analgesia, decreased sympathetic activity and minimal respiratory depression. The primary aim is to compare the effects of dexmedetomidine infusion versus propofol infusion as an adjuvant to local anaesthesia on patient’s sedation, hemodynamic and respiratory function, patients and surgeons comfort and postoperative recovery.

MATERIALS AND METHODS

100 Cases of 18-50 years age of ASA status I-II undergoing tympanoplasty surgeries were allocate into 2 groups. All cases were premedicated with Inj. glyco 10 mcg/kg IV & Inj. Diclofenac 75 mg IM 30 min before operative procedure. Group D patients received dexmedetomidine 1 µg/kg i.v.as initial dose over 20 minutes using an syringe pump, and followed by continuous maintenance infusion of dexmedetomidine at a constant rate of 0.4 µg/kg/h and titrated, if at all necessary to counteract any adverse events. In group P, an initial dose of 1 mg/kg of propofol (1% preparation contains: 10 mg/ml propofol) was infused I.V. over 20 minutes, followed by a maintenance infusion of 30 µg/kg/min. The maintenance infusion in both the groups was commenced immediately, once the initial dose infusions were stopped. Sedation level was measured by Ramsay Sedation Scale, haemodynamic parameters for every 15min intra operatively. Patient and surgeon satisfaction scores and also post-operatively Modified Aldrete Scoring was assessed for each patient after 30 minutes of the end of each operation.

RESULTS

When compared between dexmedetomidine and propofol groups both provide good surgeon satisfaction while group D better patient satisfaction. When group P is compared with group D the degree of sedation was more in P group during observations points of 15 minutes, 30 minutes, 45 minutes and 75 minutes of intraoperative periods but in rest of the times the differences were not statistically significant, And there is also no statistically significant difference in haemodynamic parameters and respiratory function.

CONCLUSION

Infusion of dexmedetomidine (I.V.) with an initial loading dose of 1 mcg/kg over 20 minutes and followed by an infusion at the rate of 0.4 mcg/kg/hr provides adequate sedation and significantly better patient satisfaction in tympanoplasty surgeries, with no significant alteration of hemodynamic and respiratory parameters in monitored anaesthesia care

KEYWORDS
Propofol, Dexmedetomidine, Sedation, Haemodynamic Changes, Surgeon’s Satisfaction and Patients Comfort.

bleeding, cost-effectiveness, postoperative analgesia, faster mobilization of the patient, and the ability to test hearing intra-operatively. But local anaesthesia alone has been reported to be associated with anxiety, dizziness, claustrophobia, and earache.1 Hence there is always quest to find out an anaesthetic drug, which can be used with local anaesthetic block with maximum benefit and minimum associated disadvantages.

Monitored anaesthesia care (MAC) typically involves administration of local anaesthesia in combination with IV sedatives, anxiolytic and/or analgesic drugs which is a common practice during various ENT surgical procedures.3 A variety of drugs like propofol, benzodiazepines have been used for hypnosis and sedation in the middle ear surgery in order to enhance the patient and surgeons comfort, however, none has been complication free. The various complications reported are over – sedation, respiratory depression, disorientation and lack of patient’s cooperation during surgery.

Propofol is widely used for sedation in many surgeries including day care surgeries. It has short duration of action, no cumulative effect, unique recovery profile as well as its rapid emergence, antiemetic action. At the same time, it has the disadvantage of causing respiratory depression as well as hypotension. Dexmedetomidine is a selective α2-adrenoceptor agonist. It has got sedative, hypnotic, analgesic as well as sympatholytic properties. It is devoid of respiratory depressant effect. It causes less hemodynamic compromise, has got opioid sparing effect and the advantage of rapid recovery after reversal with Atipamezole, a selective alpha-2 antagonist.

This prospective, double blinded, placebo controlled, randomized study has compared the sedative effect of dexmedetomidine with that of propofol. The respiratory and hemodynamic changes, the patient’s comfort and postoperative recovery have also been compared when each drug is used as a single agent for sedation in continuous intraoperative infusion at a specific rate along with local anaesthesia for middle ear surgeries.

MATERIALS AND METHODS

In a randomised double blinded prospective study, 100 Cases of 18-50 years age of ASA status I-II undergoing tympanoplasty surgeries were allocated into 2 groups. All cases were premedicated with Inj. glyco 10 mcg/kg IV & Inj. Diclofenac 75 mg IM 30 min before operative procedure. Group D patients received dexmedetomidine 1 µg/kg i.v.as initial dose over 20 minutes using an syringe pump, and followed by continuous maintenance infusion of dexmedetomidine at a constant rate of 0.4µg/kg/h and titrated, if at all necessary to counteract any adverse events. In group P, an initial dose of 1 mg/kg of propofol (1% preparation contains: 10 mg/ml propofol) was infused by i.v over 20 minutes, followed by a maintenance infusion of 30 µg/kg/min. The maintenance infusion in both the groups was commenced immediately, once the initial dose infusions were stopped. Sedation level was measured by Ramsay Sedation Scale for every 15 min intra operatively. Operation started after 20 minutes of start of drug administration when maintenance infusions started and were considered as the 0th minute observation points for the study parameters.

Local anaesthetic drug lignocaine 2% with adrenaline 1:200000 was infiltrated by the same anaesthesiologist who was not a part of the study team according to the standard protocol of the Institution after the patients were hemodynamically stable and respiratory stability was ensured and after proper skin testing of local anaesthetic for sensitivity. The anaesthesiologist administered local anaesthetic using 2% lignocaine with adrenaline (6-7 ml) (1:2,00,000) in the post-auricular area to block greater auricular and lesser occipital nerves, in the incisura terminalis to block auriculotemporal nerve and the four quadrants of the external auditory canal. Surgery was commenced after confirming adequate analgesia. Inadequate analgesia was treated with infiltration of 2% lignocaine with adrenaline (2-3 ml) at the surgical site.

Mean arterial blood pressure, heart rate, peripheral oxygen saturation, respiratory rate and Ramsay Sedation Score were monitored continuously at 15 –minute interval during the study by the anaesthesiologist. Patients were allowed to breathe spontaneously without an artificial airway during the procedure.

The infusions were discontinued after the placement of graft.

Patients were asked to answer the question, How would you rate your experience with the sedation you have received during surgery? Using a 7-point Likert verbal rating scale. This assessment of patient’s satisfaction with sedation was performed just before shifting to the ward from PACU after at least 2 hours from the end of operation.

Post-operatively Modified Aldrete Scoring was assessed for each patient after 30 minutes of the end of each operation and recorded. After obtaining hospital ethical committee approval, 100 cases of 18-50 years age, of ASA physical status I/II, undergoing elective tympanoplasty surgeries, those willing for the study & given consent were randomly allocated into 2 groups group P, group D.

A pre-operative assessment was done on the day prior to surgery. All investigations were done as per institutional protocol before the pre-operative assessment. Patients were explained in details about the concerned technique, sedation and probable intraoperative situations. The Ramsay Sedation Scale was explained to the patient during the preoperative visit and trained them about how to respond. Informed Written Consent was obtained from every patient. Patients were instructed to keep fasting for at least 8 hours. One 0.5 mg dose of tab. Alprax was given to each patient before dinner on the night before operation as a measure to alleviate anxiety of operation and maintain tranquility during operation.

All the resuscitation and monitoring equipment like of bag-mask system, laryngoscope, endotracheal tubes and emergency drugs like atropine etc. were kept prepared in the operating room for any adverse reactions.
On the morning of surgery, after the patients had arrived in the operation theatre, standard monitoring, including non-invasive arterial blood pressure for MAP, electrocardiogram (5 leads), heart rate (HR) with pulse-oxymeter, and peripheral oxygen saturation (SpO2) were used. A nasal cannula was applied and oxygen given at 2 L/min. The baseline MAP, HR, SpO2, RR and RSS were recorded. Venous cannulation (20G) were started with IV infusion of NS @10 ml/kg/Hr.

Various scales which were used in the study are as follows:

**Modified Aldrete Score**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Score 2</th>
<th>Score 1</th>
<th>Score 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity: able to move voluntarily or on command</td>
<td>All the four extremities</td>
<td>Two extremities</td>
<td>No extremities</td>
</tr>
<tr>
<td>Consciousness</td>
<td>Fully awake</td>
<td>Arousable</td>
<td>No response</td>
</tr>
<tr>
<td>Respiration</td>
<td>Able to breathe deeply and cough freely</td>
<td>Dyspnea, shallow or limited breathing</td>
<td>Apnea</td>
</tr>
<tr>
<td>Circulation</td>
<td>Blood pressure within ±20 mm of Hg of baseline</td>
<td>Blood pressure within ±20 mm to 50 mm of Hg of baseline</td>
<td>Blood pressure beyond ±50 mm of Hg of baseline</td>
</tr>
<tr>
<td>Oxygen Saturation</td>
<td>&gt;92% with room air</td>
<td>Needs oxygen supplementation to maintain saturation&gt;90%</td>
<td>&lt;90% oxygen saturation even with supplemental oxygen</td>
</tr>
</tbody>
</table>

Nine or more points are required for recovery to be confirmed.

**Likert Verbal Rating Scale**

1. Extremely dissatisfied.
2. Dissatisfied.
3. Dissatisfied somewhat.
4. Undecided somewhat.
5. Satisfied somewhat.
7. Extremely satisfied.

**Analysis of Data and Statistical Methods**

**Results and Analysis**

Categorical variables like Sex, ASA, PSS, SSS and Sedation at difference time points are expressed as Number of patients and percentage of patients and compared across the groups using Pearson’s Chi square test for independence of Attributes.

Continuous variables like age, weight, Heart rate, MAP, Respiratory Rate and SPO2 are expressed as mean ±standard deviation and compared across the groups using one way ANOVA Test.

The statistical software SPSS version 20 has been used for the analysis. An alpha level of 5% has been taken, i.e. if any p value is less than 0.05 it has been considered as significant.

**Sedation Scale (Ramsay Sedation Scale).**

1. Anxious, agitated or restless.
2. Cooperative, Oriented and tranquil.
3. Responds to command.
4. Asleep but has a sluggish response to a light glabellar tap or loud auditory stimulus.
5. Asleep has a sluggish response to a light glabellar tap or loud auditory stimulus.
6. Asleep no response.

**Table 1. Demographic Data**

<table>
<thead>
<tr>
<th>Patient Characteristics</th>
<th>Group P</th>
<th>Group D</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in years)</td>
<td>36.18±7.87</td>
<td>37.68±7.57</td>
<td>0.3337</td>
</tr>
<tr>
<td>Body weight (in kg’s)</td>
<td>50.03±2.93</td>
<td>49.95±3.24</td>
<td>0.8937</td>
</tr>
<tr>
<td>Sex (Male/Female)</td>
<td>26/24</td>
<td>25/25</td>
<td>0.8414</td>
</tr>
<tr>
<td>ASA Grade (I/II)</td>
<td>47/3</td>
<td>46/4</td>
<td>0.6951</td>
</tr>
</tbody>
</table>

The difference in means between the two groups is compared by using ANOVA (analysis of variance) test. P value less than 0.05 is considered statistically significant. There is no difference in demographic variables like age, sex, weight, ASA grading among 2 groups.

**Haemodynamic Changes Heart Rate and Map**

Statistically significant if, comparing with other group p-value is less than 0.05. There is no statistically significant difference regarding intraoperative heart rate and blood pressure between the groups.

**Figure 1. Intraoperative Heart Rate in Groups P and D**
Figure 2. Intraoperative Mean Arterial Pressure

Figure 3. Intraoperative Respiratory Rate

Figure 4. Intraoperative Oxygen Saturation (SPO$_2$)

There is no statistically significant difference regarding intraoperative respiratory rate and SPO$_2$ between the groups.

<table>
<thead>
<tr>
<th>SSS</th>
<th>Group-P</th>
<th>Group-D</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0.1460</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>24</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>9</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Surgeon’s Satisfaction Score, Patient Satisfaction Score And Their P-Values

The surgeons satisfaction score when group P is compared with group D there is no significant difference as p value is 0.1460.

The patients’ satisfaction score (PSS) group P is statistically significantly higher in group D as p value is 0.0012.

Figure 5. Surgeons Satisfaction Score

Figure 6. Patient Satisfaction Score

Table 3. Ramsay Sedation Scores During Surgery for Every 15 Min and Their P Value

Statistically significant if, comparing with other groups P-value is less than 0.05.

When group P is compared with group D the degree of sedation was more in P group during observations points of 15 minutes, 30 minutes, 45 minutes and 75 minutes of intraoperative periods but in rest of the times the differences were not statistically significant.

**Sedation in Min (Beginning of Operation)**

Sedation in Terms of Ramsay Sedation Score (RSS) for every 15 min of Observation during Surgery Expressed as Percentage in Groups P, and D.

![Figure 7.0 Min](image1)

![Figure 7.1 15 Min](image2)

![Figure 7.2 30 Min](image3)

![Figure 7.3 45 Min](image4)

![Figure 7.4 60 Min](image5)

![Figure 7.5 75 Min](image6)

![Figure 7.6 90 Min](image7)
Statistically significant if, comparing with other groups P-value is less than 0.05.
The postoperative 30 minutes modified Aldrete score when group P is compared with group D there is no statistically significant difference. since all the patients achieved on modified Aldrete score of 9, there is no clinically significant difference between the groups.

DISCUSSION
Primarily the study demonstrates that both dexmedetomidine and propofol can be used as continuous infusion at a specified dosage, safely and effectively for the sole purpose of sedation and imparts significantly high patient satisfaction scores and analgesia is taken care of separately, in middle ear surgeries, in monitored anaesthesia care. Dexmedetomidine yields better patient satisfaction score or better acceptance to patients than propofol.

Middle ear surgeries can be done solely under local anaesthesia with reasonable analgesia and minimum complications as concluded by Caner et al ,but there are certain limiting factors that lead to patient discomfort like noise during operation, anxiety, backache, claustrophobia and occasional earache as found, anxiety, dizziness, backache, claustrophobia and occasional earache as found by Yung MW et al and hence sedation is necessary along with local anaesthesia infiltration for both surgeon and patient comfort in MAC, established by Edussuriya B et al

Conventionally sedation is provided with midazolam, a benzodiazepine as shown by Sarmento KM JR et al. Propofol infusion in variable rates has been used for monitored anaesthesia care. Many studies like the one by White PF et al has concluded that propofol infusion is a clinically useful alternative to midazolam for sedation during ambulatory surgery under local or regional anaesthesia. However the use of propofol has been associated with local anaesthetic injection pain, more incidences of break through pain, patient discomfort or patient movement and significant.

Reduction in mean arterial pressure. It is a well-known fact that the hemodynamic changes are dependent on dosage of propofol. The maintenance infusions for the purpose of sedation are associated with lesser hemodynamic changes. In the text book Miller’s Anesthesia,8th edition the infusion rate for sedation is mentioned as 25–75 mcg/kg/min. 5 It is also been stated that an infusion rate more than 30mcg/kg/min is associated with amnesia. Hence we have chosen an infusion rate 30 mcg/kg/min as continuous infusion to minimize the hemodynamic changes like hypotension. Dexmedetomidine can be safely and effectively used for procedural sedation in surgeries done...
under MAC. The use of dexmedetomidine in different other ENT surgeries like FESS, septoplasty and under MAC has been documented.

Middle ear surgeries pose a different set of challenges for the patient, surgeon and anaesthesiologists. Sympathetic stimulation and movements of anxious patient cause increase bleeding and disturb fine microscopic surgery which may lead to graft failure. Whereas the advantages of local anaesthesia include: testing hearing intraoperatively, immediate detection of complications and a truncated postsurgical emergence. Good patient selection, preoperative counseling and use of appropriate sedation are important prerequisites.

In our study we had taken care of analgesia in both groups of study with Inj. Diclofenac and local anaesthetic infiltration. To assure tranquility, all of them were given one dose of tablet 0.5 mg Alprax in the night before operation. We used a continuous infusion rate of both propofol and dexmedetomidine after an initial loading dose infusion for sole purpose of sedation and compared those with placebo or control in the following aspects.

Sedation
In our study we compared sedation of P, D on the basis of Ramsay Sedation Scale in discrete points of observation. When P is compared with D the degree of sedation was more in P group during observations points of 15 minutes, 30 minutes, 45 minutes and 75 minutes of intraoperative periods but in rest of the times the differences were not statistically significant. Dexmedetomidine produces a “co-operative form” of sedation, in which patients are capable of easy transition from sleep to wakefulness and task performance when aroused. Cognitive integrity is well preserved in patients receiving dexmedetomidine. Hence helpful for intraoperative fine testing in procedures where sedation and mild analgesia are the only anaesthetic requirements.

Surgeons Satisfaction Score
The surgeons were asked to rate their satisfaction regarding operating conditions which comprises of a bloodless field, patient’s movement and ‘cooperative-sedation’ of the patient on the basis of a 7-point Likert Verbal Rating score at the end of surgery. In our study, 18 about 20% cases in P group surgeons were ‘extremely satisfied’ while they were ‘satisfied’ in about 48% cases. On the other hand surgeons were ‘extremely satisfied’ in 28% cases in D group and ‘satisfied’ in 34% cases. While comparing P and D groups; the P vs D; p value is 0.1460, not statistically significant. But in a more proportion of cases the surgeons were extremely satisfied in D group.

Reetu Verma, Rajni gupta et al, in their study on ‘dexmedetomidine and propofol for monitored anaesthesia care in the middle ear surgery’ have observed that surgeons comfort about sedation was more in D group as in our study but it was statistically significant as well. The difference with our result may be because of the fact that difference in our study technique as they changed infusion rate to optimize sedation level while we used continuous same rate of drug infusion, and excluded subjects requiring fentanyl, and rescue analgesic while we secured analgesia beforehand with inj. Diclofenac.

Ashraf Ghali et al9 observed in their study for dexmedetomidine versus propofol for sedation in patients undergoing vitreoretinal surgery under sub- Tenon’s anaesthesia, similar finding with Ours and the average surgeons satisfaction score in P and D groups were 5.35±1.33 and 5.76±0.97; respectively, implying that surgeons comfort were almost equal in both groups and comparison was not statistically significant.

Patient Satisfaction Score
The patients were asked to answer the question ‘how would you rate your experience with the sedation you have during surgery? using a 7-point Likert Verbal Rating Score. In our study we observed that 4% patients of P group were extremely satisfied and 56% were satisfied. The P vs D; p value is 0.0012.Hence the patient’s satisfaction score is significantly more in D group in comparison with P group.

Ashraf Ghali et al also found significantly higher degree of satisfaction in D group compared to P group like our study.

Overall the significantly higher patients ‘satisfaction score in case of dexmedetomidine or D group is probably due to its property that it mimics natural sleep pathway during sedation. Dexmedetomidine also imparts analgesia providing with better comfort for patient.

Respiratory rate Oxygen Saturation ($S_{PO_2}$)
The patients maintained comparable oxygen saturation throughout the procedure, Reetu Verma et al found that both dexmedetomidine and propofol provides with adequate sedation without clinically significant respiratory depression in the perioperative period. This result is similar with the result we found in our study.

Mean Arterial Pressure (MAP)
In our study we observed that mean arterial pressure in both P and D groups not statistically significant as evidenced from the p values in different discrete points of observations.

Ashraf Ghali et al observed that at similar sedative doses, dexmedetomidine and propofol resulted in a similar significant reduction in heart rate and mean arterial pressure compared with baseline values.

The same results like Ashraf Ghali et al were reported by Kaygusuz et al 10. The difference with our study results are due to the facts that Ashraf Ghali et al incorporated different demographic profile of patients as they included ASA grade III patients; they also used higher initial bolus dose for dexmedetomidine and followed by infusion 0.2 to 0.6 mcg/kg/h in contrary to our continuous infusion at the rate of 0.4 mcg/kg/h; they also used propofol infusion at the rate of 0.5 to 2 mg/kg/h and we used 30mcg/kg/min. the type of surgery was also different.

Propofol has powerful inhibitory effect on sympathetic outflow. Dexmedetomidine is also known to decrease
sympathetic outflow and circulating catecholamine level and therefore expected to cause a decrease in MAP similar to that of propofol.

But the decrease in MAP takes place in a dose dependent manner in propofol and it is been mentioned in Miller’s Anaesthesia 8th edition, that sedation requires infusion of propofol 25-75 mcg/kg/h and with infusion of >30 mcg/kg/h patients are amnestic, so we continued propofol infusion at 30 mcg/ kg/h and there was insignificant fall in MAP, and that is what we desired. In Miller’s Anaesthesia it is been also mentioned that in cases of dexmedetomidine omission of initial “loading dose” or not giving more than 0.4 mcg/kg reduces the incidence of hypotension or makes it less pronounced. In our study we adopted this principle and used a continuous infusion rate of 0.4 mcg/kg/h which led to the desired effect of insignificant fall in MAP and better hemodynamic stability.

Heart Rate
In our study we observed that heart rate d in both P and D group there was no significant difference of heart rates in P and D groups all throughout the intraoperative period.

Ashraf Ghali et al and Kaygusuz et al reported significant reduction in heart rate in both propofol and dexmedetomidine compared with baseline values but no significant difference between P and D group. This is similar finding with our result as we also found no significance difference between P and D groups. The decrease in heart rate in propofol may be due to its inhibitory effect on sympathetic outflow. The decrease in HR in case of dexmedetomidine as Well is partially due to effect on sympathetic system and partially due to vagal mimetic effect.

Postoperative Recovery and Modified Aldrete Score
In our study modified Aldrete score,11 was evaluated postoperatively after 30 minutes from the end of operation. but infusion of sedative drugs discontinued just after placement of graft in case of tympanoplasty. Hence the modified Aldrete Score was actually evaluated after around 40 to 50 minutes of discontinuation of sedative drugs.

88% patients of group P and 84% patients of group D were found to achieve a score of 10. 12% patients of group P and 16% of group D achieved a score of 9. That resulted in a P vs. D; p value of 0.5644 implying no statistically significant difference.

Ashraf Ghali et al found in their study that mean time to achieve an Aldrete score of 10 was 40.53±6.51 minutes and 37.60±6.42 minutes in the D and P groups respectively with a p value of 0.084. This result is similar to our result.

On the other hand Reetu Verma et al found that time to achieve Aldrete Score were 41.6±16.7 and 22.25±13.9 minutes respectively in D and P groups respectively in D and P groups, with a significant difference between two drugs. The difference with our study and also with study by Ashraf Ghali et al is probably because of different infusion rates, different choices of drug dosage and use of opioids.

Side Effects
No patient in our study developed bradycardia, may be because we used inj. Glycopyrrolate as premedication; No patient developed bradypnoea; the fall in blood pressure from baseline treated with intravenous fluid, no patient required vasopressor or experienced any significant fall in blood pressure. may be because we used a lower rate of infusion of sedative drugs. Those who complained of pain were treated adequately with local infiltration of local anaesthetics. Three patients of the D group complained of dry mouth which may be due to dexmedetomidine or may be because of Glycopyrrolate as well. No major side effect was noted in our study.

CONCLUSION
In our study it can be thus concluded that both an infusion of propofol with an initial loading dose of 70mcg/kg over 20 minutes followed by a continuous infusion at a rate of 30mcg/kg/min and infusion of dexmedetomidine with an initial loading dose of 1 mcg/kg over 20 minutes and followed by an infusion at the rate of 0.4 mcg/kg/hr provides adequate sedation and significantly better patients’ satisfaction, both dexmedetomidine and propofol can be used as sedative agent in a continuous infusion with specified rates of infusion along with local anaesthesia in middle ear surgeries, with dexmedetomidine being the superior of two imparting better patient satisfaction, with no significant alteration of hemodynamic and respiratory parameters in monitored anaesthesia care.

REFERENCES
