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A Comparative study of Efficacy of Oral Gabapentin and Oral Pregabalin for attenuation of haemodynamic pressor response to laryngoscopy and intubation during general anaesthesia.

Dr.Sathisha kumar.K[1],M.D., Dr.Carolin Von Mullai.A[2], D.A.,M.D.,
1.Senior Assistant professor , Department of anaesthesiology and critical care, Coimbatore medical college and Hospital,Coimbatore, Tamil nadu, INDIA. 2.Senior Assistant professor,Institute of Anaesthesiology and Critical Care ,Rajiv Gandhi government general Hospital ,Madras Medical college ,Chennai, TN, India
Corresponding Author: Dr.Carolin Von Mullai.A

Abstract: *Aim of the study is to compare the efficacy of oral gabapentin and oral pregabalin as a premedication for anxiolysis , sedation and attenuation of stress response to laryngoscopy and intubation in patients undergoing general anaesthesia. A total of 100 patients aged 20 to 60 years, ASA Risk 1 and 2 of both gender were randomized into 2 groups of 50 patients each, group G received oral gabapentin 600mg and group P received oral pregabalin 150mg 1 hour prior to surgery. Anaesthetic technique was standardized and both groups were assessed for pre operative sedation and hemodynamic changes after the premedication, before and after induction, after laryngoscopy and intubation along with intraoperative hemodynamic stability and post operative side effects.*
RESULT: Preoperative sedation levels were more and statistically significant with pregabalin premedication. The increase in heart rate systolic, diastolic and mean arterial blood pressure was lesser with pregabalin than gabapentin during laryngoscopy. The incidence of headache was much higher with gabapentin.
Keywords*: gabapentin, hemodynamic pressor response,intubation,laryngoscopy,pregabalin,sedation.*

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I. Introduction

Anxiety occurs commonly before any surgery. Anxiety causes increased stress leading to stimulation and activation of autonomic nervous system[1]. Anxiety can also cause altered pharmacokinetics of anesthetic agents. In addition, laryngoscopy & intubation are noxious stimuli which involve the manipulation of respiratory tract and further increase these stress responses[2]. The responses include tachycardia, hypertension, increased catecholamines, increase in the myocardial oxygen demand, dysarrhythmias and even increased intraocular pressure. Arterial pressure starts to increase 5 seconds before laryngoscopy, reaches the peak at approximately 1-2 min and decreases to baseline levels at 5 minutes[3]. Thus, when laryngoscopy duration is unexpectedly prolonged or a greater force is used, it causes further elevation of these parameters. While normal subjects can tolerate these stress responses, it can increase the morbidity and also the mortality in a patient with hypertension or coronary artery disease[4]. Hence it is of utmost importance to not only alleviate preoperative anxiety but also to suppress the stress responses at the time of laryngoscopy and also during airway manipulation and intubation.

Drugs that are commonly used for anxiolysis are benzodiazepines. However, the clinical action is often coupled with unwelcome sedation. Pharmacological measures are effective in their action to attenuate the catecholamine induced effectsof laryngoscopy and also intubation. They include beta blockers[6], narcotics[7], alpha 2 agonists[8], local anesthetics[9], vasodilators[10] and also calcium channel blockers[11]. Though these blunt the stress response, the search for a drug which does the same with minimal side effects continue. Recently there are studies that focus on GABA analogues namely Gabapentin[12] and alsoPregabalin to be not only used for anxiolysis but also to attenuatethe effects of airway manipulation, laryngoscopy and also intubation[13].

Gabapentin, a drug that is analogous toGamma Amino Butyric Acid was introduced into the market in 1983. Though it might beGABA analogue it is neither an agonist or antagonist. It exerts its action through its ability to bind to α_2d subunit of the calcium channels that are voltage gated resulting in decreased release of certain excitatory neurotransmitters. A recent study by Todd et al[14] states that Gabapentin might reduce the release of catecholamines from chromaffin cells of adrenal gland but without altering the content. This is a potential contributor to the Gabapentin's action in obtunding the physiological effects resulting from laryngoscopy and tracheal instrumentation.

Pregabalin is also analogous toGABA which acts in a mechanism similar to Gabapentin. It was brought into the pharmaceutical industry in 2004 to relieve neuropathic pain and as adjunctive therapy in partial seizures. However, in addition it produces anxiolysis which is utilized for preoperative anxiolysis and in attenuating the physiological stress responses

While both Gabapentin and Pregabalin are related compounds they have notable differences in their pharmacological profile. Gabapentin has slow absorption after oral administration and its bioavailability is not dose proportional. The maximum plasma concentration is attained at 2-3hours and has 60% bioavailability. It follows zero order kinetics making its action less predictable.

As opposed to Gabapentin, Pregabalin is absorbed rapidly after oral administration with its plasma concentration peaking at 1 hour. In addition, Pregabalin follows first order kinetics and thus itsplasma concentration increases with increasing dose. The bioavailability of Pregabalin is 90%.

Both drugs are excreted through renal route. Hence dose adjustment in patients showing altered renal function is required. The adverse effects of these drugs include dizziness, fatigue and somnolence. Further Gabapentin may also cause ataxia and Pregabalin dry mouth and blurred vision.

This study is thus based upon these differences to compare the anxiolytic effect and extent of attenuation of stress response to laryngoscopy and intubation.

II. Materials and Methodology

It was a randomized controlled study. The patient posted for elective surgery under general anaesthesia were choosen at random. All the 100 patients belonged to ASA 1 and 2 with age distribution between 20-60 years. After obtaining approval from ethical committee and written consent from the patients, the study was conducted. The exclusion criteria includes patients refusal, ASA risk 3 and 4, age more than 60 years, anticipated difficult airway, patients with preexisting cardiac, pulmonary and renal diseases.

Afterthorough pre-anaesthetic checkup and obtaining informed written consent 100 patients scheduled to undergo elective surgery under general anaesthesia in Coimbatore Medical College Hospital will be enrolled in the study. They are then randomly allocated into 2 groups -

Group G (Receiving Oral Gabapentin 600mg)

Group P (Receiving Oral Pregabalin 150mg)

Patients are given their allocated drugs 1 hour prior to surgery with sips of water. Baseline parameters such as pulse rate, blood pressure, respiratory rate and oxygen saturation are recorded. The patient's level of anxiety and sedation are also recorded.1 hour after premedication, the vitals are again recorded along with the anxiety and sedation scores.

After shifting into the theatre, patient connected to the monitors and intravenous fluids are started. Patients are thenpremedicated with Inj. Midazolam 1mg iv, Inj. Glycopyrrolate 0.2mg iv and Inj, Fentanyl 2µg/kg. Patient is then preoxygenated with 100% oxygen for 3 minutes. Induction done with Inj. Propofol 2 mg/kg or at a dose required for loss of verbal commands. Inj. Succinyl choline is given at a dose of 2 mg/kg to facilitate laryngoscopy and intubtion. Anaesthesia is maintained with Nitrous oxide 60% in oxygen, Desflurane and Inj. Vecuronium at an initial dose of 0.1 mg/kg followed by 0.01 mg/kg for supplemental muscle relaxation. After completion of surgery the residual muscle blockade reversed by Inj. Neostigmine 0.05 mg/kg and Inj. Glycopyrrolate 0.01 mg/kg. After adequate respiratory efforts, patient extubated following thorough suctioning.

The duration of laryngoscopy is recorded with a stopwatch. The hemodynamic parameters heart rate and mean arterial pressure which are the outcome measures are then recorded before and after induction, during laryngoscopy 1 minute, 3 minutes, 5 minutes and 10 minutes following intubation.

Intraoperatively, all the parameters were continuously monitored. Complications such as hypotension defined as Systolic BP less than 90mmHg or 30% decrease from baseline value, bradycardia (Heart rate < 60/min), hypoxemia and arrhythmias are watched for and treated appropriately.

Following surgery, the patients are monitored for any adverse effects such as dizziness, headache, nausea and vomiting which are then treated with the appropriate measures in the postoperative ICU.

Clinical Scores Used In Measurement of Anxiety and Sedation

4 Point Anxiety Score	
0	Quiet and Comfortable
1	Uneasy
2	Worried or Anxious
3	Very worried or Very Upset

4 Point Sedation Score	
1	Wide Awake
2	Sleeping Comfortably but responding to verbal commands
3	Deep Sleep but Arousable
4	Deep Sleep but not Arousable

III. Statistical Analysis

The collected data was analysed using IBM.SPSS(STATISTICAL PACKAGE FOR SOCIAL SCIENCES) statistics software 23.0 Version. Data descriptive statistics frequency analysis was used to describe descriptive data and percentage analysis was used for categorical variables. For continuous variables, mean and standard deviation was used. Unpaired sample t-test was used for find the significant difference between bivariate samples in Independent groups and Chi-square test used to find significant difference in categorical data. In both the tests, a probability value of ≤ 0.05 was considered to be significant

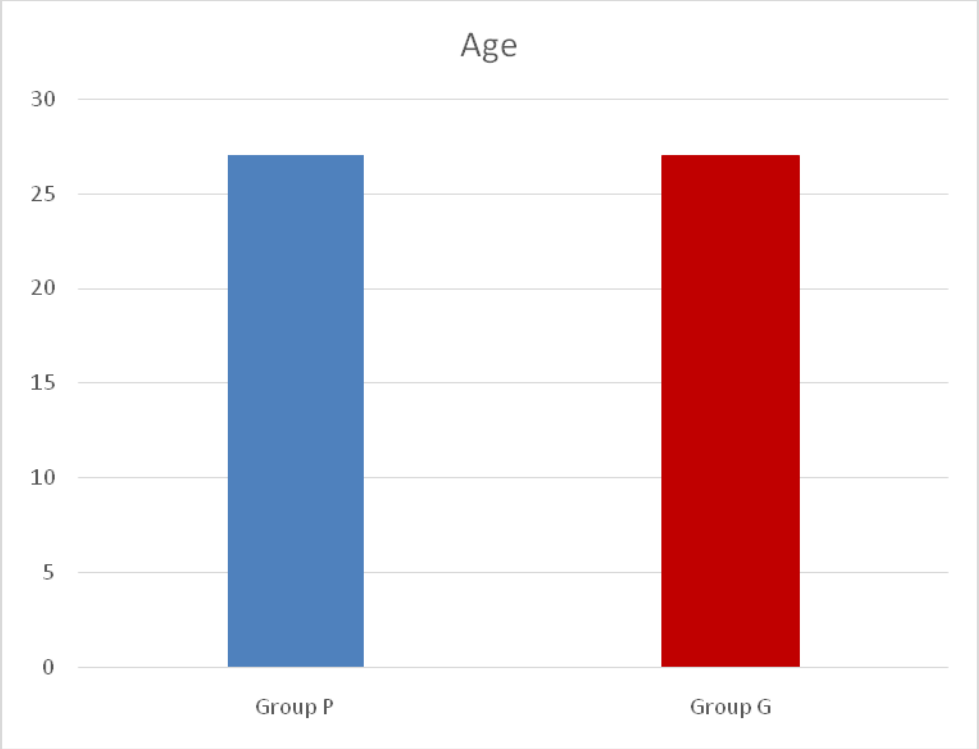
P-value: ≤ 0.01 – highly significant

P-value: $0.01 < P \leq 0.05$ – Significant

P – value: > 0.05 – Not Significant

In this study, 100 patients of either ASA I or II who were scheduled to undergo elective surgery under general anaesthesia were randomized into 2 groups to receive either Oral Pregabalin or Oral Gabapentin as premedication 1 hour prior to induction. They were compared in terms of anxiety levels, sedation levels and stress response to laryngoscopy and intubation by their heart rate and mean arterial pressure during laryngoscopy/ intubation and at 1 minute, 3 minutes, 5 minutes and 10 minutes following the procedure.

Table: Demographic Profile – Age Distribution



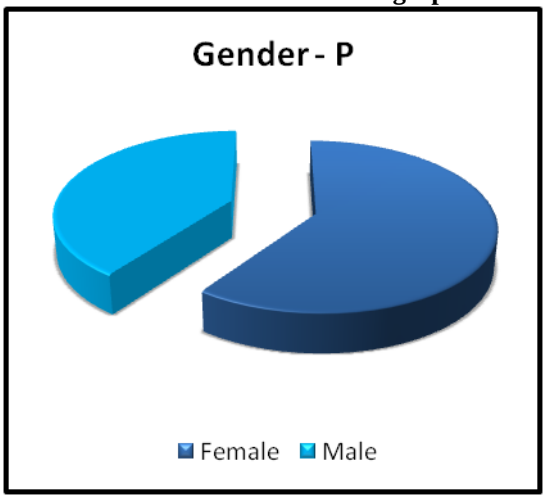
Group Statistics

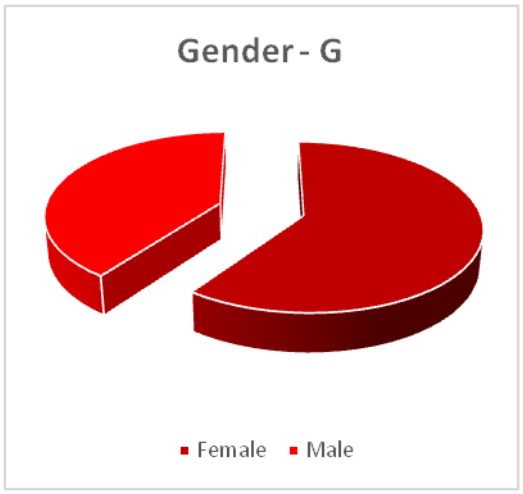
	PG	N	Mean	Std. Deviation	Std. Error Mean
Age	P	50	27.40	9.001	1.273
	G	50	27.20	7.502	1.061

Mean Age – Group P	27.40 ± 9.001
Mean Age – Group G	27.20 ± 7.502
p-value	0.904
Significance	**Not Significant**

The age of the study subjects is comparable in both the groups and not significant with a p-value of 0.904

Table: Demographic Profile – Gender Distribution





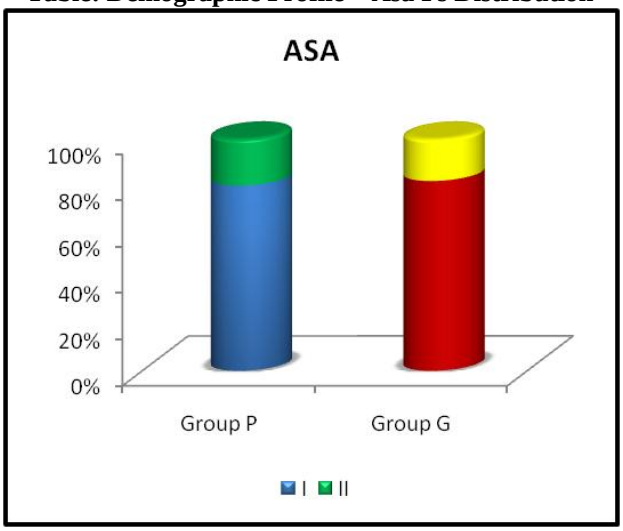
Crosstab

			PG		
			P	G	Total
Sex	Female	Count	30	30	60
		% within PG	60.0%	60.0%	60.0%
	Male	Count	20	20	40
		% within PG	40.0%	40.0%	40.0%
Total		Count	50	50	100
		% within PG	100.0%	100.0%	100.0%

Chi-Square Value	0.000
p-value	1.000
Significance	**Not Significant**

Both the groups are comparable with respect to the gender distribution. Both genders are distributed equally in both groups and its statistically insignificant at a p-value of 1.000

Table: Demographic Profile – Asa Ps Distribution



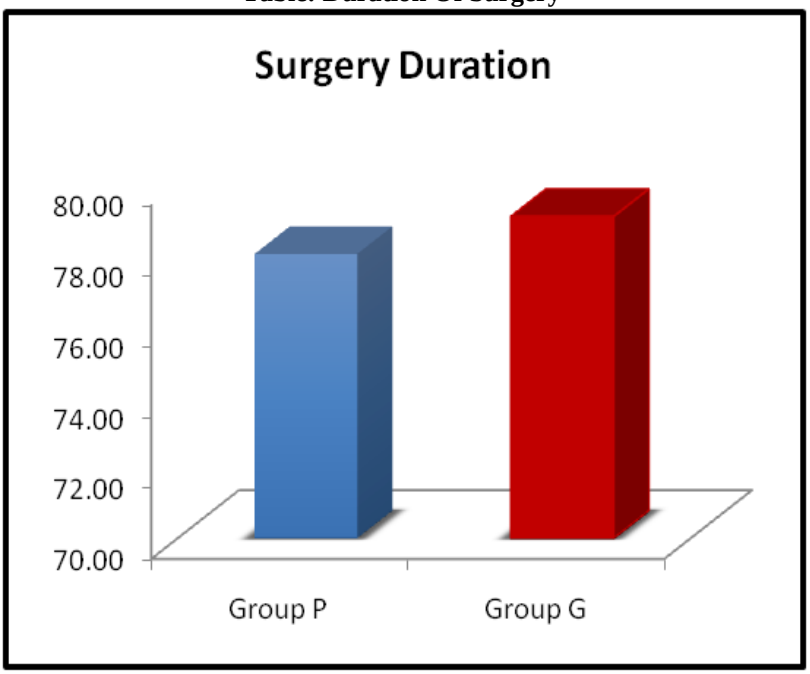
Crosstab

			PG		
			P	G	Total
ASA - PS	I	Count	40	41	81
		% within PG	80.0%	82.0%	81.0%
	II	Count	10	9	19
		% within PG	20.0%	18.0%	19.0%
Total		Count	50	50	100
		% within PG	100.0%	100.0%	100.0%

Chi-Square Value	0.065
p-value	0.799
Significance	**Not Significant**

Both the groups were comparable with respect to American Society of Anaesthesiologists physical status. There were more number of patients belonging to ASA-PS 1. P-value is 0.799 indicating that its insignificant.

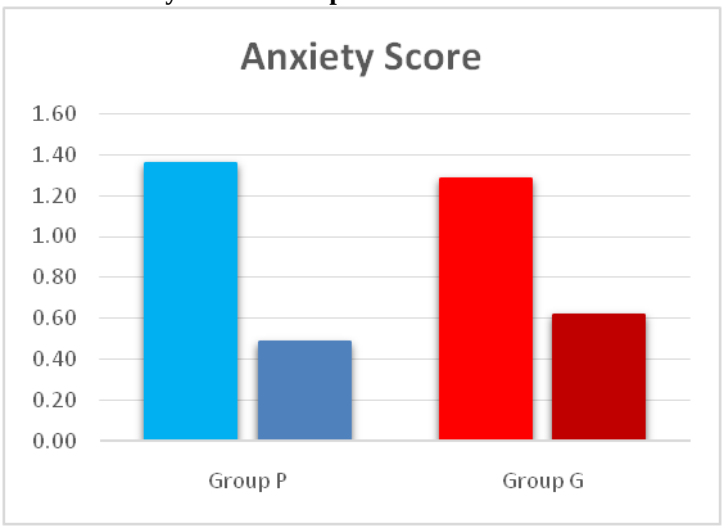
Table: Duration Of Surgery



DURATION OF SURGERY (MINUTES)				
GROUP P		**GROUP G**		**p-value**
MEAN	**SD**	**MEAN**	**SD**	
78.04	24.942	79.10	26.413	0.837 (Not Significant)

The duration of the surgery in both the groups were comparable. The mean duration of surgery in group P was 78.04 minutes and in group G was 79.10. The p-value of 0.837 shows that it is not significant between both the groups.

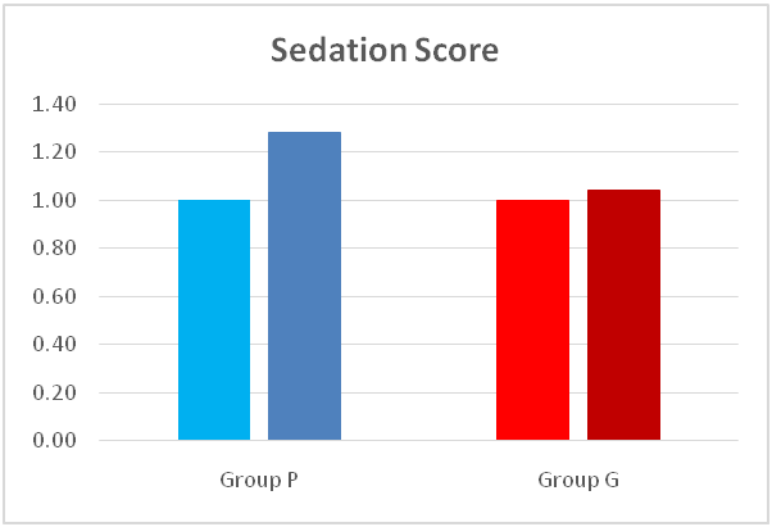
Table: Anxiety Score – Preoperative and After Premedication



	BASELINE SCORE	AFTER PREMEDICATION	p-value
GROUP P	1.36	0.48	**0.001 (Significant)**
GROUP G	1.28	0.62	**0.002 (Significant)**

The baseline anxiety scores were comparable between both the groups. Following the administration of premedication, the anxiety scores which were measured again have proved to be statistically significant in anxiolysis in both the groups.

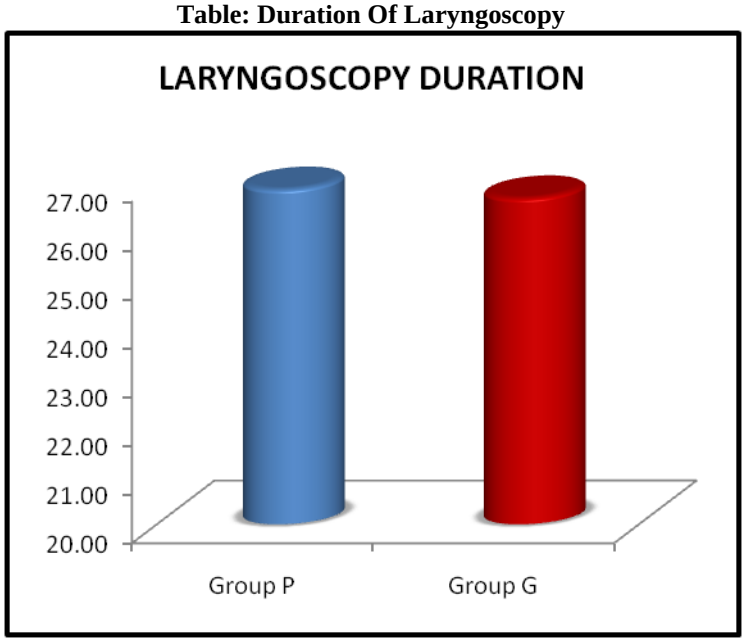
Table: Sedation Score – Baseline and After Premedication



	BASELINE SCORE	AFTER PREMEDICATION	p-value
GROUP P	1.00	1.28	**0.001 (Significant)**
GROUP G	1.00	1.04	**0.157 (Not Significant)**

The baseline sedation scores were comparable between both the groups. However, individuals in group P has high sedation scores following premedication when compared to those in Group G and it is statistically significant.

Table: Duration Of Laryngoscopy

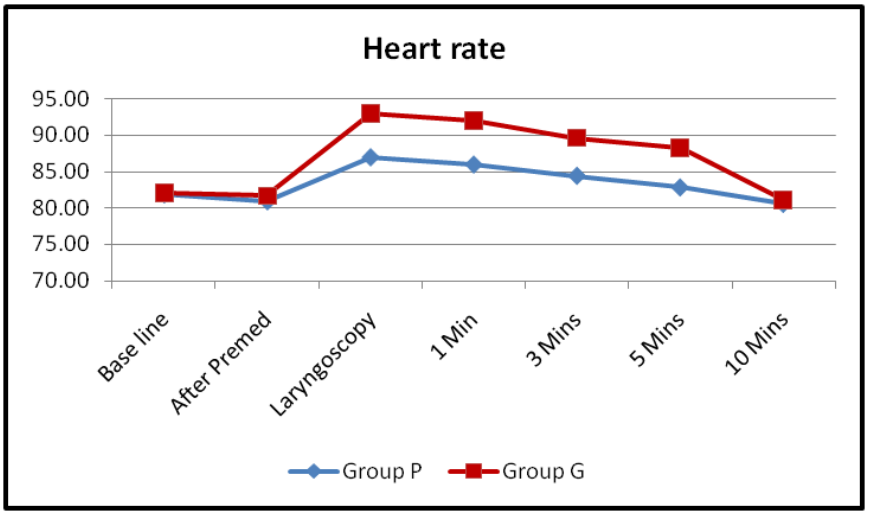


DURATION OF LARYNGOSCOPY (SECONDS)				
GROUP P		GROUP G		p-value
MEAN	SD	MEAN	SD	
26.86	2.579	26.68	2.668	0.732 (Not Significant)

The duration of laryngoscopy between both the groups were similar and not statistically significant with a p-value of 0.732

Table: Heart Rate

TIME	PREGABALIN	GABAPENTIN	P-VALUE
BASELINE	81.92±4.499	82.02±5.622	0.922
AFTER PREMEDICATION	80.98±4.162	81.66±5.386	0.482
DURING LARYNGOSCOPY	86.96±4.145	93.02±5.957	**0.002**
1 MINUTE AFTER LARYNGOSCOPY	85.98±4.093	91.98±5.964	**0.001**
3 MINUTES AFTER LARYNGOSCOPY	84.44±3.980	89.64±5.958	**0.001**
5 MINUTES AFTER LARYNGOSCOPY	82.86±3.964	88.28±6.064	**0.001**
10 MINUTES AFTER LARYNGOSCOPY	80.62±3.999	81.04±4.973	0.643



Baseline: Heart rates in both the groups were comparable and were statistically not significant with a p-value of 0.922

After Premedication: After pre-medication, the heart rates between both the groups were comparable and not statistically significant with a p-value of 0.482

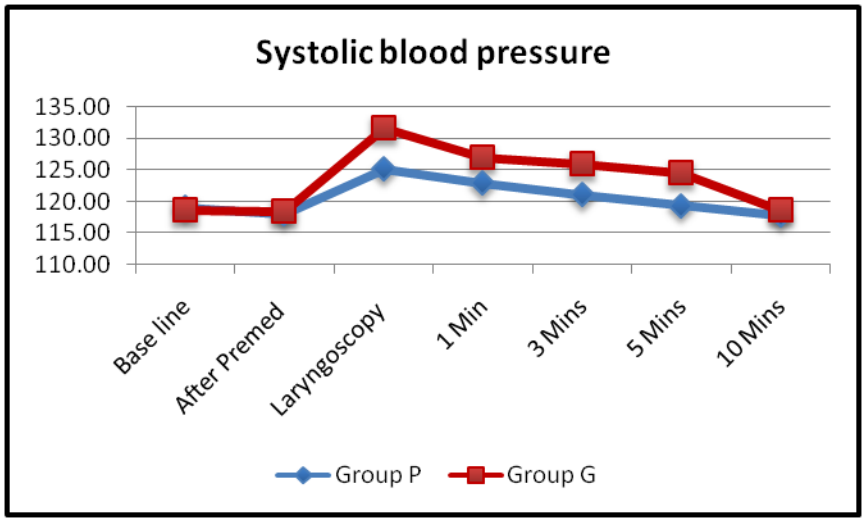
During Laryngoscopy: During this event, the heart rates in both the groups increase but the increase in Group G is much higher and is statistically significant.

At 1, 3 and 5 minutes: The heart rates in both the groups begin to decrease but they are still at a higher level compared to their baseline values and the heart rates of individuals belonging to the Group G remain at a higher level and it is statistically significant.

At 10 minutes: Heart rates return to almost the baseline values in both the groups and it is not significant statistically with a p-value of 0.643

Table: Systolic Blood Pressure

TIME	PREGABALIN	GABAPENTIN	P-VALUE
BASELINE	119.06±6.906	118.70±5.832	0.779
AFTER PREMEDICATION	118.06±6.557	118.44±5.942	0.762
DURING LARYNGOSCOPY	125.06±6.466	131.64±6.639	**0.001**
1 MINUTE AFTER LARYNGOSCOPY	122.92±6.184	127.06±6.672	**0.002**
3 MINUTES AFTER LARYNGOSCOPY	121.08±5.749	125.88±6.617	**0.001**
5 MINUTES AFTER LARYNGOSCOPY	119.34±5.812	124.52±6.529	**0.001**
10 MINUTES AFTER LARYNGOSCOPY	117.80±5.862	118.66±5.763	0.461



Baseline: Systolic BP in both the groups were comparable and were statistically not significant with a p-value of 0.779

After Premedication: After pre-medication, the systolic BP between both the groups were comparable and not statistically significant with a p-value of 0.762

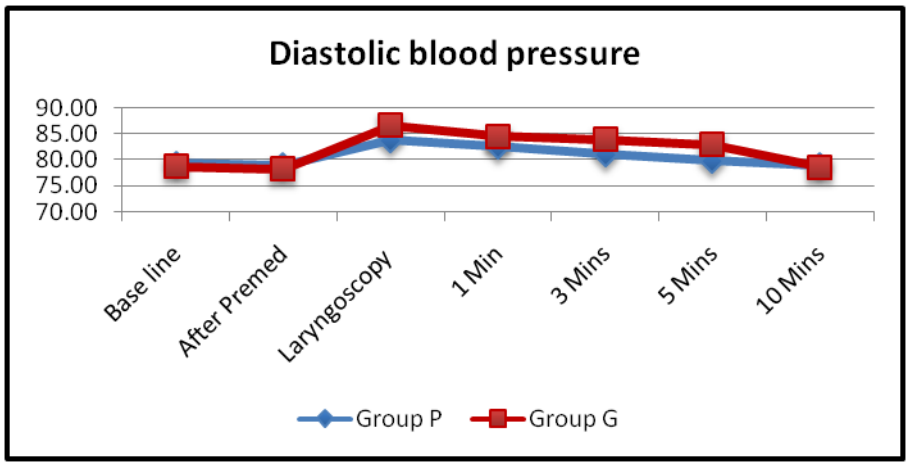
During Laryngoscopy: During this event, the systolic BP in both the groups increase but the increase in Group G is much higher and is statistically significant.

At 1, 3 and 5 minutes: The systolic BP in both the groups begin to decrease but they are still at a higher level compared to their baseline values and the systolic BP of individuals belonging to the Group G remain at a higher level and it is statistically significant with a p-value <0.01

At 10 minutes: Systolic BP return to almost the baseline values in both the groups and it is not significant statistically with a p-value of 0.461

Table: Diastolic Blood Pressure

TIME	PREGABALIN	GABAPENTIN	P-VALUE
BASELINE	79.30±4.344	78.82±4.680	0.596
AFTER PREMEDICATION	78.92±4.009	78.20±4.647	0.409
DURING LARYNGOSCOPY	83.78±4.161	86.64±3.805	**0.001**
1 MINUTE AFTER LARYNGOSCOPY	82.46±4.117	84.54±4.287	**0.001**
3 MINUTES AFTER LARYNGOSCOPY	81.02±4.197	83.96±4.111	**0.001**
5 MINUTES AFTER LARYNGOSCOPY	79.80±3.763	82.98±4.013	**0.001**
10 MINUTES AFTER LARYNGOSCOPY	78.96±3.625	78.60±4.585	0.664



Baseline: Diastolic BP in both the groups were comparable and were statistically not significant with a p-value of 0.596

After Premedication: After pre-medication, the diastolic BP between both the groups were comparable and not statistically significant with a p-value of 0.409

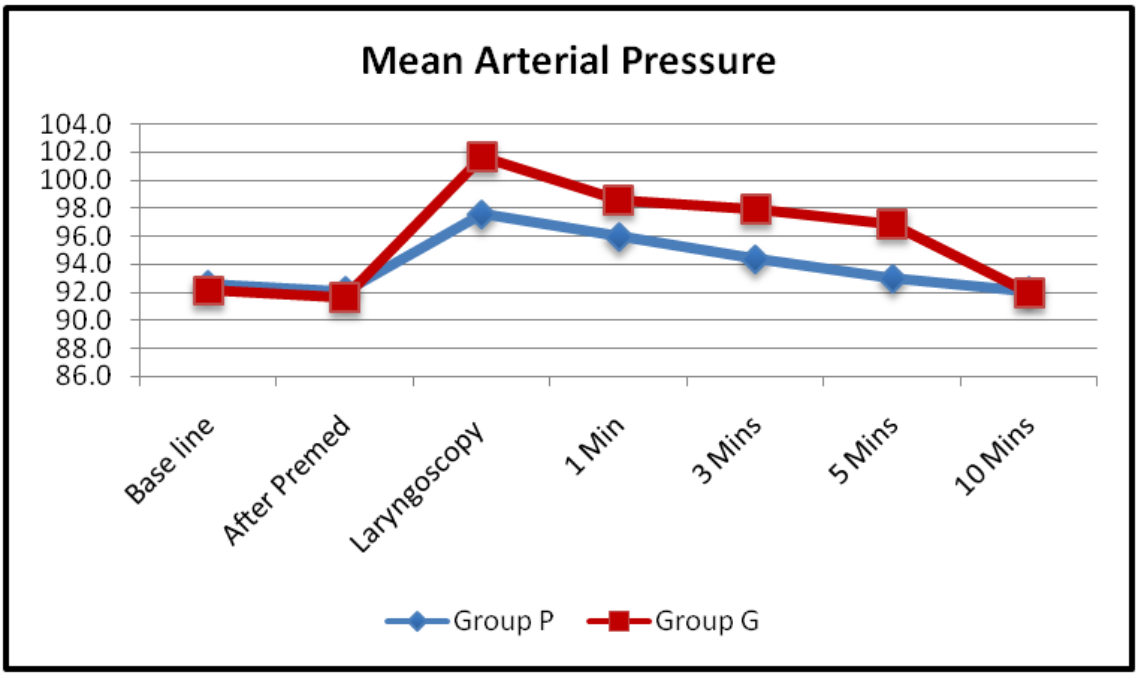
During Laryngoscopy: During this event, the diastolic BP in both the groups increase but the increase in Group G is much higher and is statistically significant with a p-value < 0.01

At 1, 3 and 5 minutes: The diastolic BP in both the groups begin to decrease but they are still at a higher level compared to their baseline values and the diastolic BP of individuals belonging to the Group G remain at a higher level and it is statistically significant with a p-value <0.01

At 10 minutes: Diastolic BP returns to almost the baseline values in both the groups and it is not significant statistically with a p-value of 0.664

Table: Mean Arterial Pressure

TIME	PREGABALIN	GABAPENTIN	P-VALUE
BASELINE	92.556±4.9368	92.114±4.9029	0.654
AFTER PREMEDICATION	92.044±4.5719	91.618±4.9155	0.655
DURING LARYNGOSCOPY	97.542±4.6539	101.678±4.5565	**0.001**
1 MINUTE AFTER LARYNGOSCOPY	95.926±4.4731	98.602±4.8649	**0.002**
3 MINUTES AFTER LARYNGOSCOPY	94.382±4.3861	97.938±4.7836	**0.001**
5 MINUTES AFTER LARYNGOSCOPY	92.980±4.1519	96.886±4.6773	**0.001**
10 MINUTES AFTER LARYNGOSCOPY	92.052±4.2840	91.936±4.8264	0.899



Baseline: Mean arterial BP in both the groups were comparable and were statistically not significant with a p-value of 0.654

After Premedication: The mean arterial BP between both the groups were comparable and not statistically significant with a p-value of 0.655

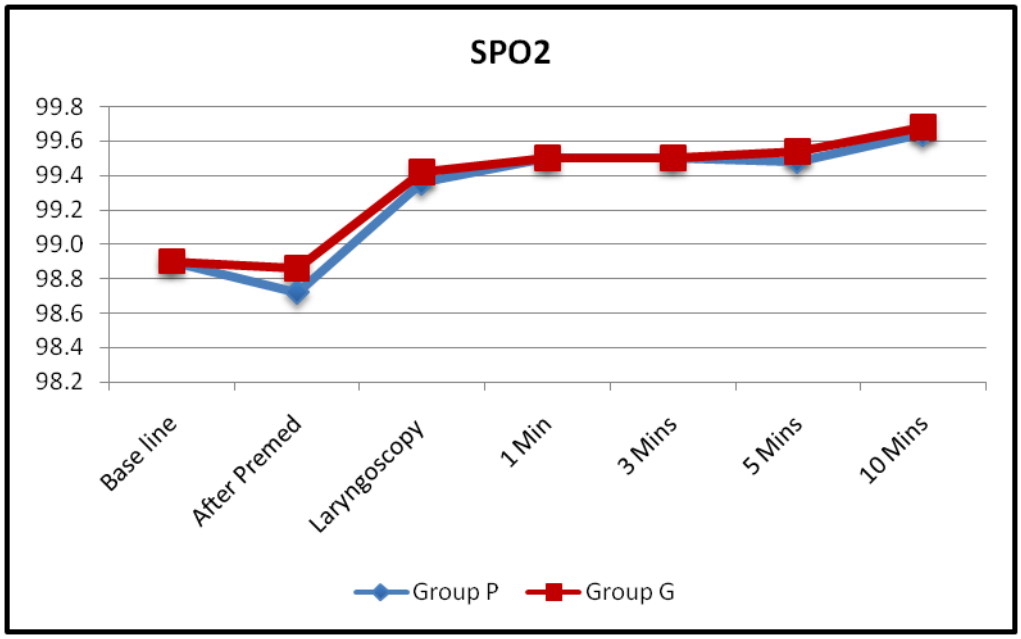
During Laryngoscopy: During this event, the mean arterial BP in both the groups increase but the increase in Group G is much higher and is statistically significant.

At 1, 3 and 5 minutes: The mean arterial BP in both the groups begin to decrease but they are still higher compared to their baseline values and the mean arterial BP of individuals belonging to the Group G remain at a higher level and it is statistically significant.

At 10 minutes: Mean arterial BP returns to almost the baseline values in both the groups and it is not significant with a p-value of 0.899

Table: SPO_2

TIME	PREGABALIN	GABAPENTIN	P-VALUE
BASELINE	98.90±0.303	98.90±0.303	1.000
AFTER PREMEDICATION	98.72±0.454	98.86±0.639	0.210
DURING LARYNGOSCOPY	99.36±0.485	99.42±0.499	0.543
1 MINUTE AFTER LARYNGOSCOPY	99.50±0.505	99.50±0.505	1.000
3 MINUTES AFTER LARYNGOSCOPY	99.50±0.505	99.50±0.505	1.000
5 MINUTES AFTER LARYNGOSCOPY	99.48±0.505	99.54±0.503	0.553
10 MINUTES AFTER LARYNGOSCOPY	99.64±0.485	99.68±0.471	0.677



The SpO_2 of the individuals in both the groups were comparable at all times and were not statistically significant with the p-value being >0.05 at the stages.

Table: Adverse Effects

ADVERSE EFFECTS	GROUP P		GROUP G	
	NO. OF PATIENTS	%	NO. OF PATIENTS	%
NIL	48	96	47	94
HEADACHE	1	2	2	4
DIZZINESS	1	2	1	2
NAUSEA	0	0	0	0
VOMITING	0	0	0	0
POSTOPERATIVE RESPIRATORY DEPRESSION	0	0	0	0

Patients in both the groups were observed for adverse effects following administration of the drugs and post operatively. While 2 patients in Group G experienced headache and 1 patient complained of dizziness, only 2 patients in Group P experienced adverse effects. However, this is not significant.

IV. Discussion

The anticipation of surgery increases the anxiety levels in patients undergoing surgery and this when combined with the stress of intubation increases the heart rates and mean arterial pressures of these patients to undesirable levels. Many drugs have been used in attenuation of these stress responses. This study has been undertaken to compare the efficacy of 2 drugs namely Pregabalin and Gabapentin given orally 1 hour prior to surgery in not only attenuating the stress responses to intubation but also to lessen the anxiety levels of the patients and provide sedation. The study subjects include those who were posted for elective surgery to be done under general anaesthesia belonging to either ASA PS I or II between the age groups 18 to 60 years.

Demographic Data

Both the groups were comparable in terms of age, gender, ASA PS classification, duration of laryngoscopy and duration of surgery and the p-value between them showed that it was not statistically significant.

Anxiety Levels

The preoperative anxiety levels were comparable in both the groups. Following premedication, the anxiety levels in both the groups decreased and they were found to be statistically significant. This result is similar to the study done by Bashyam et al[54] who found both the drugs to alleviate anxiety to significant levels.

Sedation levels:
The sedation levels in the preoperative room evaluation were comparable between both the groups. Following premedication, the sedation levels were again assessed in the patients. While patients in both the groups were sedated, the sedation levels in the patients belonging to Group P was statistically significant. This observation is similar to that of Bashyam et al[54] who found that Pregabalin causes statistically significant sedation when compared to Gabapentin.

Heart rate:
The baseline heart rates were comparable between both the groups. The hearts rates were again measured following premedication, during laryngoscopy, at 1 minute, 3 minutes, 5 minutes and 10 minutes following intubation. After premedication, there was no significant difference between both the groups and also from their baseline values.
The heart rates begin to increase during laryngoscopy and in the immediate period after that in both the groups. However, the increase was less in Group P when compared to group G and it was statistically significant during laryngoscopy, 1 minute, 3 minutes and 5 minutes following intubation.
At 10 minutes after intubation, the heart rates begin to decrease to near baseline values and it was not statistically significant both the groups.
This finding is similar to Bashyam et al[54] who found that Pregabalin attenuates heart rate during laryngoscopy and in the immediate period after that.
Gupta et al[61], who used Pregabalin at 150mg as a premedication also found that heart rate at 1-minute following intubation was significantly attenuated. The results of this study also correlate with the study done by Gupta et al.

Systolic Blood Pressure:
Systolic blood pressure in both the group was similar at baseline and following premedication.
The systolic blood pressure increased during laryngoscopy, at 1 minute, 3 minutes and 5 minutes following intubation in both the groups. However, the increase in Group G individuals is much higher than that of Group P individuals. This was found to be significant.
At 10 minutes, the systolic pressure in both the groups reached near the baseline and were not statistically significant.

Diastolic Blood Pressure:
The diastolic blood pressure in both the groups were similar at baseline and after premedication.
In response to laryngoscopy and intubation, the diastolic blood pressure in both the groups increased but the increase was higher in Group G and this was statistically significant during laryngoscopy, at 1 minute, 3 minutes and 5 minutes.
At 10 minutes, the diastolic blood pressure between both the groups returned to near baseline levels and not statistically significant.
This correlates with the results of the study done by Doddaiah at al[56] who used Pregabalin 150mg and Gabapentin 800mg.

Mean Arterial Pressure:
The mean arterial pressure was calculated from the observed values of systolic and diastolic blood pressures.
The baseline mean systolic pressure in Group P and Group G were similar and not statistically significant. The values after premedication were not much different from the baseline values and it was also statistically not significant.
During laryngoscopy, 1 minute, 3 minutes and 5 minutes following intubation the mean arterial pressure increased in both the groups and again the rise in Group P was significantly lesser than Group G.
At 10 minutes after intubation, the mean arterial pressure of the patients in both the groups returned to near baseline values and with a p-value of 0.899, it proved to be statistically not significant.
Bashyam et al[54] in their study, found the mean arterial pressure to be statistically significantly supressed with Group P when compared to Group G during laryngoscopy, 1 minute, 3 minutes and 5 minutes following intubations. This is similar to results of the undertaken study.

Adverse effects:
Adverse effects in both the groups were noted.
In the study done by Bashyam et al.[54], the incidence of headache in Group P was 3.33% and in Group G it was found to be 6.66% whereas the incidence of dizziness was 3.33% in Group P and 6.66% in Group G.

In this study, the incidence of headache in Group P was 2% and 4% in Group G.
The incidence of dizziness in both Group P and Group G was similar at 2%.

V. Conclusion

This study is prospective randomized study of oral Pregabalin and oral Gabapentin as premedication prior to the administration general anaesthesia to be compared in terms of anxiolysis, sedation and attenuation of intubation stress response. The study was carried out at Coimbatore Medical College Hospital where 100 patients aged between 20 years and 60 years belonging to ASA PS I & II were scheduled to undergo surgery under general anaesthesia. The patients were randomly allocated into 2 groups by sealed envelope method. Those belonging to Group P received Oral Pregabalin 150mg and those in Group G Oral Gabapentin 600mg 1 hour prior to the surgery.

The following are the conclusions derived from this study:

- There is no significant difference in the demographic profiles between both the groups with respect to age, gender, ASA PS classification, duration of laryngoscopy and duration of surgery.
- Patients in both the groups had significant anxiolysis
- Patients in both the groups were sedated following premedication but those belonging to Group P were more sedated and it was statistically significant.
- The heart rates of patients in both the groups increased during laryngoscopy and in the immediate period following that but the increase was much lesser in those belonging to Group P which was statistically significant during laryngoscopy, 1-minute, 3-minutes and 5-minutes after intubation. The heart rates returned to near baseline levels at 10 minutes following intubation.
- The rise in systolic pressure, diastolic pressure and mean arterial pressure of those belonging to Group P was much lesser than their Group G counterparts during laryngoscopy, 1-minute, 3-minutes and 5-minutes after intubation. Pregabalin thus provided better stability of mean arterial pressure during the stress of laryngoscopy and intubation.
- The SpO_2 was comparable at all times in both the groups.
- The incidence of dizziness was equal in both the groups.
- Other adverse effects such as nausea, vomiting, and postoperative respiratory depression was not observed in both the groups.

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