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An Observational Study of Pregabalin 150 MG 300 MG for Post- Operative Analgesia in Lower Limb Orthopaedic Surgeries Under Spinal Anaesthesia

KEYWORDS

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ABSTRACT ***INTRODUCTION :*** *Pregabalin is a synthetic molecule , a structural derivative of the inhibitory neurotransmitter gamma- amino butyric acid (GABA) . It is an α- 2-α ligand having analgesic , anti- convulsant, anxiolytic properties, binding to α- 2-α subunits of the calcium channels resulting in a decrease in neurotransmitters including glutamate, serotonin . Pregabalin is associated with few dose dependent side effects , sedation being the most common one.*

METHODS: *Sixty patients undergoing lower limb orthopaedic surgeries were randomized to receive tablet pregabalin 150 mg and pregabalin 300 mg (30 each) one hour before surgery. Intra-operative haemodynamics, post- operative analgesia and adverse effects were compared.*

RESULTS: *Both groups were comparable in terms of Intra-operative haemodynamics, post- operative analgesia and adverse effects .*

CONCLUSION: *Group receiving pregabalin 300 mg had better post- operative analgesia , required fewer doses of rescue analgesia with mild sedation which is clinically non- significant.*

INTRODUCTION :

Postoperative pain is a major problem after orthopedic surgeries. Appropriate management of postoperative pain is known to reduce the length of the hospital stay and to make patients more comfortable by reducing pain- associated complications [1] Pregabalin acts as a synthetic analog of the neurotransmitter gamma-aminobutyric acid (GABA) with analgesic, anticonvulsant, and anxiolytic effects . Oral bioavailability is 90%. After oral administration , maximum plasma concentration can be achieved within one **hour** [2,3]

AIMS AND OBJECTIVES:

The aim is to evaluate post operative analgesic benefit in patients receiving pregabalin 150 mg and pregabalin 300 mg.

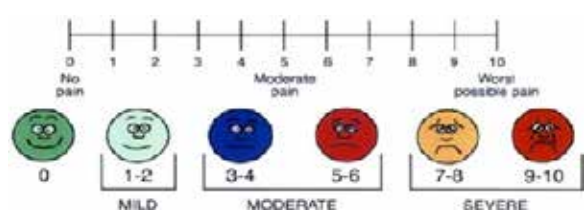
To compare,

(a) The efficacy
(b) Duration of analgesia.
(c) intra- operative haemodynamics.
(d) Intra-operative and post-operative complications .
(e) Post- operative diclofenac consumption within 24 hours.
(f) side effects.

METHODOLOGY:

60 patients undergoing lower limb orthopaedic surgeries were randomized to receive tablet pregabalin 300 mg (Group 1) and pregabalin 150 mg (group 2) (30 in each) one hour before surgery. Routine monitoring in the form of NIBP, Pulse Oximetry and ECG was attached. Spinal anesthesia was instituted with 3.5ml of 0.5% H bupivacaine in L3- L4 inter-vertebral space in sitting position . Intra-operative haemodynamics, post- operative analgesia and adverse effects were compared. Patients monitored intra-operatively for pulse rate, blood pressure, SpO_2, ECG and complications. Pain assessed by Visual analogue scale at 1, 4, 8, 12, 18, 24 hrs post-operatively.

FIGURE 1: VISUAL ANALOGUE SCALE



INCLUSION CRITERIA:

(a) Number of patients : 60

(b)ASA : I or II

(c) Age group : 20 – 50 YEARS

EXCLUSION CRITERIA:

(a) Patient refusal.

(b)Patients on anti - epileptics, analgesics, anti- platelets, or on anticoagulants.

(c) Known allergy to the trial drugs.

(d)ASA III or more.

(e)Contraindication to spinal anesthesia

Any patient with the visual analogue scale more than 3 were given Inj diclofenec 1.5 mg/kg im. Number of doses of diclofenac injection given at each interval were calculated and the results tabulated .

P<0.05 was considered statistically significant.

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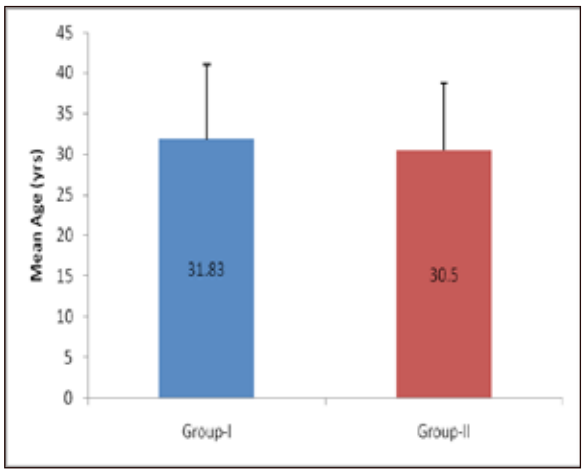
OBSERVATION AND RESULTS :

Statistically no significant differences between the groups in terms of their demographic data and ASA was noted (p>0.05).



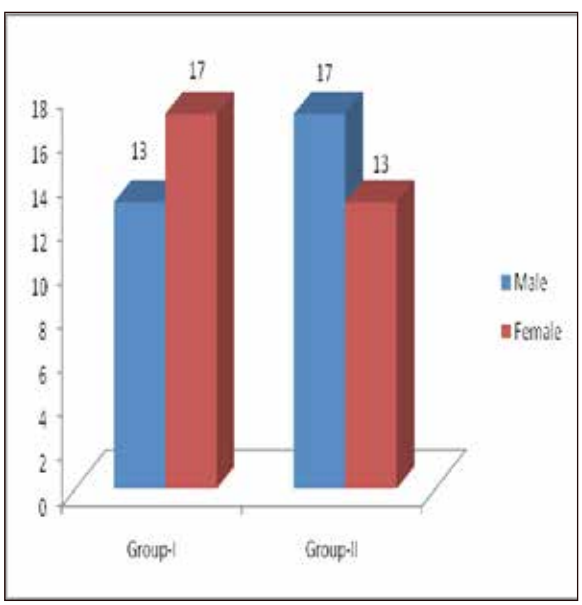
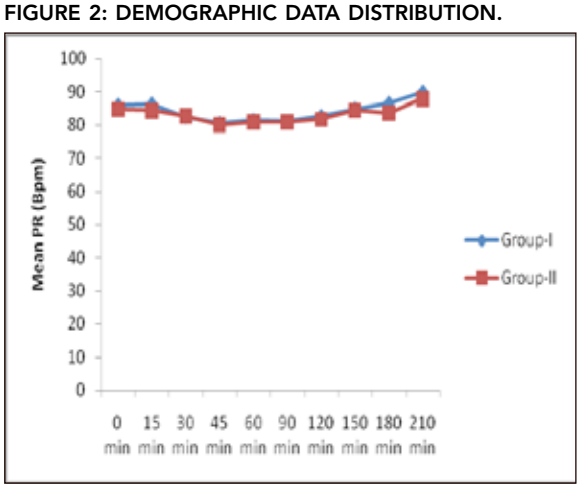


FIGURE 2: DEMOGRAPHIC DATA DISTRIBUTION.



GROUP 1 – 300 mg PREGABALIN
GROUP 2 – 150 mg PREGABALIN

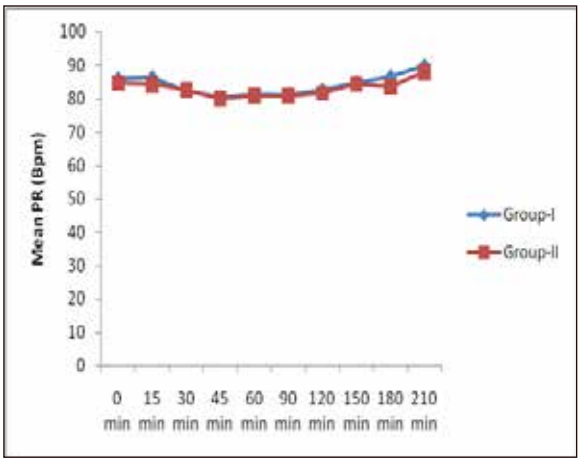


FIGURE 3 : DISTRIBUTION OF MEAN PULSE RATE OVER VARIOUS TIME INTERVALS FOR BOTH GROUPS

Haemodynamically , There was no statistically significant difference between the groups in terms of pulse rate at all-time intervals for both the groups(P>0.05)

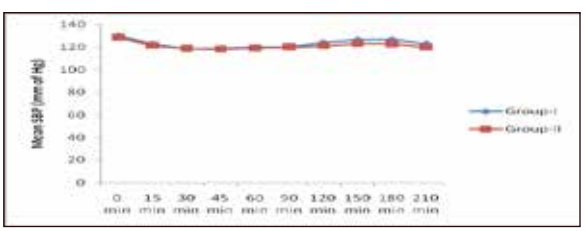


FIGURE 4: DISTRIBUTION OF MEAN SBP OVER VARIOUS TIME INTERVALS FOR BOTH GROUPS

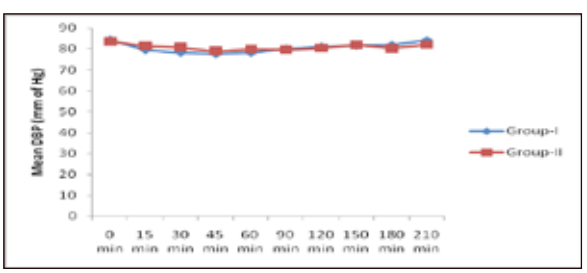


FIGURE 5: DISTRIBUTION OF MEAN DBP OVER VARIOUS TIME INTERVALS FOR BOTH GROUPS

There was no statistically significant difference between the two groups regarding SBP and DBP (P>0.05)

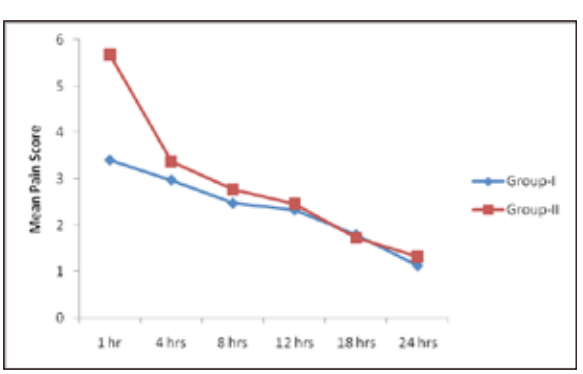


FIGURE 6: DISTRIBUTION OF MEAN POST OPERATIVE PAIN SCORE OVER VARIOUS TIME INTERVALS FOR

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BOTH GROUPS.

There was a highly significant difference in the mean post operative pain score in the first hour with a mean pain score of group 1 being 3.40 and that of group 2 being 5.67 with a p value of <0.001 , the mean pain scores at 4 hours was 2.97 for group 1 and 3.37 for group 2 which is statistically significant with a p- value<0.05. mean pain score at 8 hours post-operatively was 2.47 for group 1 and 2.77 for group 2 which is statistically significant with a p- value<0.05, hence we make out that maximum difference exists between the 2 groups in the first 8 hours post- operatively.

TABLE 1 : MEAN PAIN SCORES AT VARIOUS TIME INTERVALS FOR BOTH GROUPS

TIME	GROUP 1		GROUP 2		P-VALUE
	MEAN	S.D	MEAN	S.D	
1 HR	3.40	.621	5.67	1.295	< 0.001
4 HR	2.97	.320	3.37	1.033	0.047
8 HR	2.47	.507	2.77	.626	0.046
12 HR	2.33	.479	2.47	.681	0.384
18 HR	1.80	.551	1.73	.740	0.694
24 HR	1.13	.346	1.33	.479	0.069

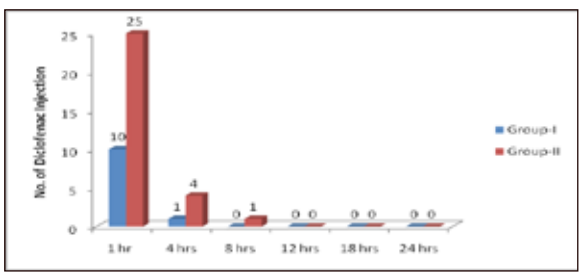

FIGURE 7: NUMBER OVER DICLOFENAC INJECTIONS GIVEN OVER VARIOUS TIME INTERVALS FOR BOTH GROUPS

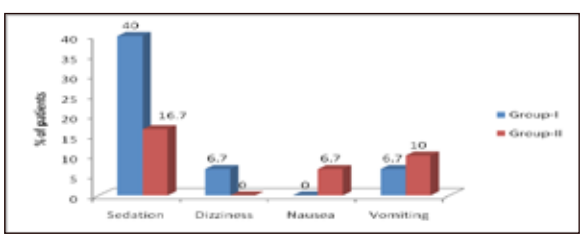

FIGURE 8: SIDE EFFECTS IN BOTH GROUPS

DISCUSSION:

Optimal pain treatment with minimal side-effects is essential to allow early mobility, optimal functional recovery, and to reduce postoperative morbidity and mortality. Opioid-related side-effects such as nausea and sedation are undesirable [4]

Pregabalin acts on the α_2- subunit of presynaptic, voltage dependent calcium channels that are distributed throughout the peripheral and central nervous system.

Pregabalin appears to produce an inhibitory modulation of neuronal excitability , particularly in areas of the central nervous system dense in synaptic connections such as the neocortex, amygdala, and hippocampus.[5,6]

CONCLUSION:

Group receiving pregabalin 300 mg had better post- operative analgesia , required fewer doses of rescue analgesia with mild sedation which is clinically non- significant .

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