Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr ICV 2018= 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

A comparative evaluation of sodium valproate vs propanalol in migraine

Kunal Priyadarshi[1], A.K. Choudhury[2]

[1]Tutor, Department of Pharmacology, Pataliputra Medical College and Hospital, Dhanbad, Jharkhand, India;
[2]Professor & Head, Department of Pharmacology, Pataliputra Medical College and Hospital, Dhanbad, Jharkhand

ABSTRACT

Background: Migraine is one of the most common causes of headaches in children and adolescents. The present study was conducted to compare sodium valproate vs propanalol in migraine. **Materials & Methods:** This study was conducted on 120 patients of migraine of both genders. Patients were divided into 2 groups. Group I patients were treated with propranolol, while patients in group II received sodium valproate. **Results:** Out of 120 patients, group I had males were 24 and females were 26. In group II, males were 28 and females were 22. Excellent result drug efficacy was seen in 32 in group I and 17 in group II, good in 15 in group I and 17 in group II, fair 7 in group I and 14 in group II and poor 6 in group I and 12 in group II. The difference was significant (P< 0.05). **Conclusion:** Authors found that propranolol is more effective in migraine as compared to sodium valproate.

Key words: Migraine**,** Propranolol, Sodium valproate

Received: 26 October, 2019 Revised: 21 November, 2019 Accepted: 23 November, 2019

Corresponding author: Dr. Kunal Priyadarshi, Tutor, Department of Pharmacology, Pataliputra Medical College and Hospital, Dhanbad, Jharkhand, India;

This article may be cited as: Priyadarshi K, Choudhury A.K.. A comparative evaluation of sodium valproate vs propanalol in migraine. J Adv Med Dent Scie Res 2020;8(1):114-117.

INTRODUCTION

Migraine is one of the most common causes of headaches in children and adolescents, resulting in missed school days and disruption of other activities.[1] The prevalence of migraine in the pediatric population ranges from 1.4% to 10.6% depending on diagnostic criteria, the age distribution of the study sample, and other methodologic features.[2]

Migraine headaches are common, with a worldwide prevalence ranging between 8 and 18%. Migraines cause significant disability, even during periods between attacks, and are responsible for $1 billion in medical costs and $16 billion in lost productivity per year in the US alone. The diagnostic criteria for migraine headaches have evolved over time.[3] Currently, the International Headache Society (IHS) diagnostic criteria for migraine includes having at least 5 attacks that last 4–72 hours, that are unilateral, pulsating, moderate or severe in intensity and aggravated by or cause avoidance of routine physical activity and are also accompanied by nausea and/or vomiting, photophobia or phonophobia.[4] IHS further classifies migraine as with or without an aura and as episodic or chronic. Chronic migraine is defined as more than 15 migraine headaches per month for more than 3 months. Chronic migraines result in significantly greater disability than episodic migraines. Propranolol has been prescribed for migraine prophylaxis since 1966. Antiepileptic drugs for migraine prophylaxis have been studied since 1970; carbamazepine was the first antiepileptic to be assessed.[5] The present study was conducted to compare sodium valproate vs propanalol in migraine.

MATERIALS & METHODS

This study was conducted in Department of Pharmacology, Pataliputra Medical College and Hospital, Dhanbad, Jharkhand from Jan 2019 to June 2019. It comprised of 120 patients of migraine of both genders. Patients were informed regarding the study and written consent was taken. Ethical approval was obtained prior to the study.

Patient information such as name, age, gender etc. was recorded. Patients were divided into 2 groups. Group I patients were treated with propranolol, while patients in group II received sodium valproate. Propranolol was started at a dosage of 3 mg/kg/day in two divided doses, and sodium valproate was started at a dosage of 30 mg/kg/day in two divided doses.

Headache frequency, severity, and duration were recorded. Headache severity was scored on a 1- to 3-point scale. Drug efficacy was considered 'excellent' if the prophylactic agent reduced the baseline headache frequency per month by more than 70%, 'good' if reduced by 50–70%, 'fair' if reduced by 20–50%, and 'poor' if reduced by <20%. Results thus obtained were subjected to statistical analysis using chi-square test. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Drug	Propranolol	Sodium valproate
Male	24	28
Female	26	22

Table I shows that out of 120 patients, group I had males were 24 and females were 26. In group II, males were 28 and females were 22.

Table II Drug efficacy

Drug efficacy	Group I	Group II	P value
Excellent	32	17	0.01
Good	15	17	
Fair	7	14	
Poor	6	12	

Table II, graph I shows that excellent result drug efficacy was seen in 32 in group I and 17 in group II, good in 15 in group I and 17 in group II, fair 7 in group I and 14 in group II and poor 6 in group I and 12 in group II. The difference was significant (P< 0.05).

Graph I Drug efficacy

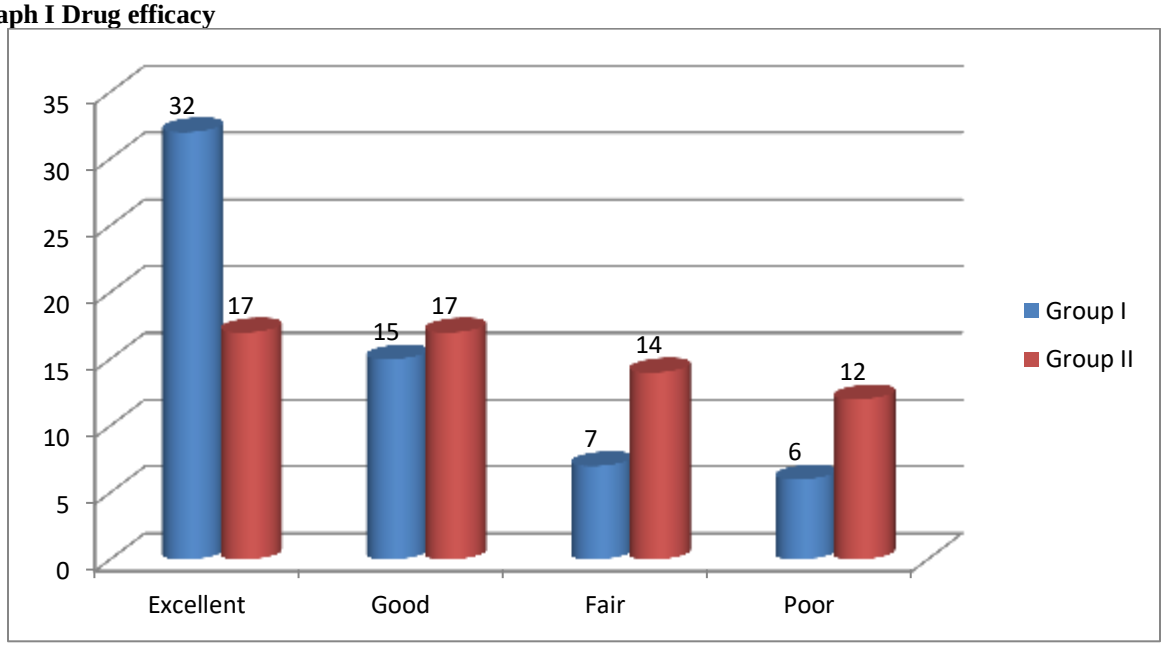

Table III Efficacy results after 6 months

Parameters	Group I	Group II	P value
Reduction of baseline headache frequency by >50%	82%	65%	0.05
Reduction of headache severity by at least one grade	61%	52%	0.71
Reduction of headache duration	34	28	0.62
Complete cessation of headache attacks	20	11	0.02

Table III shows that reduction of baseline headache frequency by >50% was seen in 82% in group I and 65% in group II, reduction of headache severity by at least one grade was seen in 61% in group I and 52% in group II, reduction of headache duration was observed in 34 in group I and 28 in group II, complete cessation of headache attacks was seen in 20 in group I and 11 in group II. The difference was significant (P< 0.05).

DISCUSSION

Headache disorders, this are characterized by the recurrent episodes of headache and are the most common nervous system disorders.[6] Headache itself is the painful and also disabling feature of few numbers of primary headaches, like migraine, cluster headache, tension type headache. Among these, the migraine headache is ubiquitous, prevailing, disabling and essentially treatable, but still under-estimated and under-treated. Migraine is the second most cause of headache and the most common headache related and neurologic cause of disability in the world.[7] The name 'migraine' comes originally from the Greek word 'hemicrania', it means 'half of the head', it represents one of the most important features of the condition, that in many of the cases, the pain will affects half of the head only. However sometimes the pain is felt bilaterally, either at back or front of the head and sometimes rarely all over the body and face ('migrainous corpalgia'). The pain is generally throbbing and sometimes pulsatile in nature and it typically increases by any form of movements made by the body or head.[8] The present study was conducted to compare sodium valproate vs propanalol in migraine.

In present study, Group I patients were treated with propranolol, while patients in group II received sodium valproate. Group I had males were 24 and females were 26. In group II, males were 28 and females were 22. Wideroe et al[9] found that the mean headache frequency per month was reduced from 13.86 – 2.11 to 4.23 – 3.24 in group A, and from 13.23 – 2.43 to 5.83 – 4.04 in group B; the difference between the two groups was statistically significant ($p < 0.01$). The mean headache duration per week was decreased from 9.9 – 7.4 hours to 3.2 – 5.9 hours in group A, and from 9.1 – 6.9 hours to 3.7 – 5.0 hours in group B; although there was no statistically significant difference between propranolol and sodium valproate, headache duration was markedly improved with each drug ($p < 0.002$). Reduction of headache severity by at least one grade was seen in 64% of patients in group A and in 56% in group B, and complete cessation of headache attacks occurred in 14% of patients in group A and 10% in group B (not significant). Minor side effects appeared to be fairly well tolerated by patients in both groups, with no significant difference in side effects between the two groups.

We found that excellent result drug efficacy was seen in 32 in group I and 17 in group II, good in 15 in group I and 17 in group II, fair 7 in group I and 14 in group II and poor 6 in group I and 12 in group II. Taghdiri et al[10] found that there were 32 trials comparing anticonvulsants to placebo with a total of 8529 participants who averaged 41 years (range 12–76) in age; 81% of participants were women. Twenty-seven of these trials focused on episodic migraine headaches, five evaluated chronic migraine and four chronic daily headaches. The average rate of withdrawals was 23%. Studies averaged 15 weeks (range 4–82) with a mean of 153 participants (range 23–487). All of the studies reported headache frequency as their outcome. The two most commonly tested anticonvulsants were topiramate (n = 12) and valproate (n = 6). Other anticonvulsants tested included acetazolamide (n = 1), carbamazepine (n = 1), carisbamate (n = 1), clonazepam (n = 1), gabapentin (n = 4), lamotrigine (n = 1), levetiracetam (n = 3), oxcarbazepine (n = 1), and vigabatrin (n = 1).

CONCLUSION

Authors found that propranolol is more effective in migraine as compared to sodium valproate.

REFERENCES

1. Silberstein SD, Goadsby PJ, Lipton RB. Management of migraine: an algorithmic approach. Neurology 2000; 55 (9 Suppl. 2): 46-52.
2. Rabkin R, Stables DP, Levin NW, et al. The prophylactic value of propranolol in angina pectoris. Am J Cardiol 1966; 18: 370-83.
3. Kass B, Nestvold K. Propranolol (Inderal) and clonidine (Catapressan) in the prophylactic treatment of migraine: a comparative trial. Acta Neurol Scandinav 1980; 61: 351-6.
4. Stensrud P, Sjaastad O. Comparative trial of Tenormin (atenolol) and Inderal (propranolol) in migraine. Headache 1980; 20: 204-7.
5. Behan PO, Reid M. Propranolol in the treatment of migraine. Clin Trials 1980; 224: 201-4 23. Diamond S, Kudrow L, Stevens J, et al. Long-term study of

propranolol in the treatment of migraine. Headache 1982; 22: 268-71.
6. Diamond S, Medina JL. Double blind study of propranolol for migraine prophylaxis. Headache 1976; 16: 24-7 25. Borgesen SE. Treatment of migraine with propranolol. Postgrad Med J 1976; 52 Suppl. 4: 163-5.
7. Klimek A. Use of propranolol in the treatment of migraine. Neurol Neurochim Pol 1975; 10: 12-5 27.
8. Nair KG. A pilot study of the value of propranolol in migraine. J Postgrad Med 1975; 21: 111-3.
9. Wideroe TE, Vigander T. Propranolol in the treatment of migraine. BMJ 1974; 2: 699-701 29. 10. Taghdiri MM, Razavi Z. A comparison between the treatment and side effect of sodium valproate and propranolol in preventing migraine headaches. Cephalalgia 2008; 28 (4): 466 31.