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Original Research

Propranolol versus flunarizine in prophylaxis of migraine

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ABSTRACT:
Background: Migraine is a common and disabling health problem and the primary goals of preventive treatment are to reduce attack frequency, severity, and duration. The present study compared propranolol and flunarizine in prophylaxis of migraine. **Materials & Methods:** 80 patients of migraine of both genders were divided into 2 groups of 40 each. In group I, patients received propranolol 20 to 160mg/day and group II patients received flunarizine 5 to 10mg/day for three months. **Results:** Group I had 18 males and 22 females and group II had 15 males and 25 females. The mean duration of migraine was 21.5 minutes and 21.8 minutes. The mean frequency/month of migraine was 5.03 and 5.17, MIDAS was 10.9, 10.2 and VAS was 6.6 and 5.4 in group I and group II respectively. The difference was non- significant (P> 0.05). Adverse events were hair loss in 1 in group II, tremors in 1 in group I and 2 in group II, dizziness in 1 in group I, weight gain in 1 in group I and 2 in group II and insomnia in 1 in group II. The difference was non- significant (P> 0.05). **Conclusion:** Bothpropranolol and flunarizinedrugs found to be equally effective in management of cases of migraine.
Key words: Migraine,propranolol, flunarizine

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INTRODUCTION

Migraine is a common and disabling health problem and the primary goals of preventive treatment are to reduce attack frequency, severity, and duration. Every patient is different and there is no 'right' prophylactic agent.Migraine is typically manifest by episodic disabling headache, though it is more than just head pain.[1] Differential diagnosis is from tension type headache (TTH), with which migraine is co-morbid (this differential is also discussed from the other perspective elsewhere in this supplement). Migraine lasts hours or days, and is absent more often than it is present; the average attack frequency is once a month. TTH is often chronic and it is present more often than it is absent. Spontaneous overactivity and abnormal amplification in pain and other, predominantly sensory, pathways in the brainstem, leads to migraine.[2] Current opinion favours a primarily neural cause, involving feedback loops through innervation of cranial arteries in the trigeminovascular system. A relative deficiency of 5-hydroxytriptamine (5-HT) may be near the root cause, and is linked to the action of most drug treatments.[3] Ongoing research is studying the relevance of calcium channel abnormalities, and peptides such as calcitonin gene related peptide, which may be closer than 5-HT to the underlying cause, offering hope for improved treatment in the future. Migraine is usually polygenic. Uncommon migraine variants, such as familial hemiplegic migraine and CADASIL, are single gene disorders. These are neurodegenerative, not primarily headache conditions.[4]

The management of migraine involves non-pharmacological and pharmacological approaches and the choice of therapy depends on the severity of the attack.[5] The non-pharmacological therapies include avoidance of trigger factors and lifestyle modifications, while as Pharmacotherapy for primary headache disorders is traditionally divided into acute and preventive therapies. The utility of flunarizine and propranolol in migraine prophylaxis are well-

known.[6]The present study compared propranolol and flunarizine in prophylaxis of migraine.

MATERIALS & METHODS

The present study was comprised of 80 patients of migraine of both genders. All were informed regarding the study and their written consent was obtained. Inclusion criteria was history of 3 to 12 migraines a month (IHS) for six months.

Data such as name, age, gender etc. was recorded. All were divided into 2 groups of 40 each. In group I patients received propranolol 20 to 160mg/day and group II patients received flunarizine 5 to 10mg/day for three months. Symptoms of drowsiness or any other common adverse drug effects they felt or noticed were recorded. Respiratory rate, weight, pulse rate, blood pressure was noted. Adverse effects were also recorded. In all patients,Migraine Disability Assessment Score (MIDAS) and VAS was recorded. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

Groups	Group I	Group II
Agent	Propranolol	Flunarizine
M:F	18:22	15:25

Table I shows that group I had 18 males and 22 females and group II had 15 males and 25 females.

Table II: Comparison of parameters

Parameters	Group I	Group II	P value
Duration (minutes)	21.5	21.8	0.94
Frequency/month	5.03	5.17	0.72
MIDAS	10.9	10.2	0.86
VAS	6.6	5.4	0.12

Table II shows that mean duration of migraine was 21.5 minutes and 21.8 minutes. Themean frequency/monthof migraine was 5.03 and 5.17, MIDAS was 10.9, 10.2 and VAS was 6.6 and 5.4 in group I and group II respectively. The difference was non- significant (P> 0.05).

Graph I: Comparison of parameters

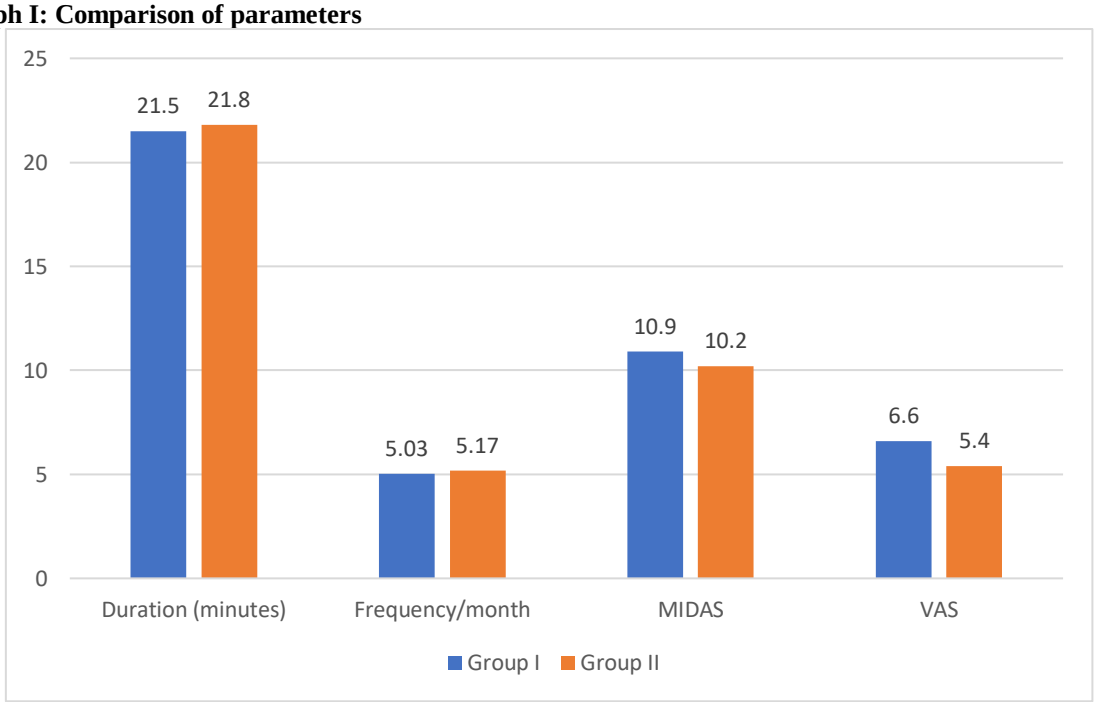

Table III: Assessment of adverse effects

Adverse effects	Group I	Group II	P value
Hair loss	0	1	0.18
Tremor	1	2	0.06
Dizziness	1	0	0.18
Weight gain	1	2	0.06
Insomnia	0	1	0.18

Table III shows that adverse events were hair loss in 1 in group II, tremors in 1 in group I and 2 in group II, dizziness in 1 in group I, weight gain in 1 in group Iand 2 in group II and insomnia in 1 in group II. The difference was non- significant (P> 0.05).

DISCUSSION

Migraine is one of the oldest, debilitating ailments known to man and is characterized by recurring, frequent, unilateral headaches lasting between 4 and 72 hours, aggravated by routine physical activity.[7] It is often accompanied by a variety of symptoms which may be autonomic, neurological, and gastrointestinal in nature. Some of the symptoms associated with migraine are; nausea, vomiting, loss of appetite, photophobia, phonophobia, osmophobia.[8]There are two main types of migraine:migraine without aura (MO), and migraine with aura (MA). Many people have both; MO is at least three times as common as MA.[9]Migraine should be distinguished from cluster headache, which is relatively rare and causes recurrent unilateral headache with autonomic dysfunction.[7] The third, common though often challenging differential diagnosis is medication overuse headache (MOH). This typically complicates migraine which is then transformed into a chronic daily headache similar to chronic TTH often with some migrainous features.[10]

An additive effect of propranolol and flunarizine may allow for a reduction in drug dosage. In addition, propranolol and flunarizine have different mechanisms of action in the headache treatment. Propranolol is thought to exert its effects through its activity at 5-HT2 receptor sites. Flunarizine as a calcium channel antagonist prevent spasm of cerebral vessels by inhibiting contraction of smooth muscle.[11]The present study compared propranolol and flunarizine in prophylaxis of migraine.

We found that group I had 18 males and 22 females and group II had 15 males and 25 females.Taylor FR[12] concludes that migraine preventive medications have been associated with weight gain, a higher incidence of weight gain was observed divalproex sodium than with propranolol and flunarizine.

We found that mean duration of migraine was 21.5 minutes and 21.8 minutes. The mean frequency/month of migraine was 5.03 and 5.17, MIDAS was 10.9, 10.2 and VAS was 6.6 and 5.4 in group I and group II respectively. Linde et al[13]reported no significant difference in the proportion of responders between divalproex sodium versus propranolol or between sodium valproate versus flunarizine for preventing migraine attacks in adult patients with episodic migraine.

We found that adverse events were hair loss in 1 in group II, tremors in 1 in group I and 2 in group II, dizziness in 1 in group I, weight gain in 1 in group I and 2 in group II and insomnia in 1 in group II. Bhat et al[14] in their study divided patients into three groups of 30 patients to receive - propranolol 20 to 160mg/day; flunarizine 5 to 10mg/day or divalproex sodium 250 to 750mg/day, for three months. Total 90/116 patients completed the study. No significant differences were found between the groups with regards to mean age or other baseline migraine features. All the drugs significantly decreased the frequency, duration and severity of migraine.

Raybarman et al[15]evaluated the efficacy of a fixed combination of low doses of long - acting propranolol and flunarizine, when flunarizine mono therapy is ineffective in migraine. Thirty- five patients compatible with the diagnosis of migraine without aura received an initial single evening dose of flunarizine of 10 mg for a period of 8 weeks and none of them showed change of migraine attacks per month. These patients were divided into two treatment groups - Group A received a fixed combination of 20 mgpropranolol and 5mgflunarizine and group B received a fixed combination of 40mgpropranolol and 10mgflunarizine for a period of 8 weeks, without a "drug-free" period of observation. The patients were assessed at the end of 8 weeks period for differences in attack frequency, duration and intensity compared to the baseline as well as in both the treatment groups. Both groups showed significant reduction in the mean (±SD) of monthly migraine frequency, headache intensity, and headache duration when compared to baseline parameters. However, there was no significant difference in frequency, duration and severity for both doses groups when compared. There was no adverse effect observed. This study suggests that the fixed dose combination of 20 mg propranolol and 5 mg flunarizine could be a new treatment initiative, especially for patients in whom flunarizine mono therapy is ineffective in migraine prophylaxis.

CONCLUSION

Authors found that bothpropranolol and flunarizinedrugs found to be equally effective in management of cases of migraine.

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