RESEARCH ARTICLE

Flunarizine Vs Propranolol in the Prevention of Migrainous Headache Attacks

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ABSTRACT

Migraine is a long-lasting disorder characterized by disabling, recurrent attacks of headache that is shifted from one side of the head to another side, may be located in the front of the head or felt in the entire head associated with many autonomic and neurological symptoms. Beta and calcium channel blocking medications were used in this clinical trial to observe their efficacy in reducing the frequency and severity of migraine attacks. This study was carried out for 3 months period on 124 patients suffering from classical migraine who were divided into two groups, group A, receiving beta-blockers (Inderal) 20mg twice daily, and group B receiving 5 mg Flunarizine single dose at night. The severity and frequency of headaches was recorded before adminstering the drugs and then every month for three consecutive months. The severity and frequency of headache attacks were reduced in both study groups but significantly reduced in those receiving Flunarizine drugs. We conclude that Flunarizine drug is a very effective drug as prophylactic to reduce the severity and frequency of headaches in patients suffering from migraine.

Keywords: Flunarizine, Migrainous Headache, Prevention, Propranolol.

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INTRODUCTION

Migraine is a chronic condition characterized by frequent attacks of moderate-severe headaches usually preceded by aura like nausea, visual hallucination, abdominal pain, fatigue with dizziness, and lasted for from 4 hours to 3 days. About 15% of the population are affected,[1] and women are affected more than men.[2,3] One of the theories that explain the pathophysiology related to migraine attacks is a state of neuronal hyper-excitability.[4,5] In the presence of crucial conditions (e.g., stress), the threshold for hyper-excitability reduced, resulting in a neural shoot, spread of cortical depression, and neurovascular cascade occurrences that affect the development of clinical symptoms of migraine. Many measures are important to avoid the attacks of migrainous headaches, like changing certain modalities in the lifestyle, avoiding triggering factors, and considering certain types of medications. Usually, those medications considered in a certain type of patients, like those patients who developed more than 3 attacks of headaches/month or at least 8 headache days in one month, those with severe, devastating headaches despite proper acute treatment, those who have contraindications to acute therapy and in specific migraine subtypes like hemiplegic, basilar migraine or migraine with prolonged aura.[2,3,6] Many medications are offered for migraine prevention, such as Propranolol, sodium valproate, amitriptyline, and flunarizine. The usefulness, adverse effects, contraindications, cost, and compliance should be deliberated when deciding the right agent. So study aims to show the efficacy of Flunarizine in the prevention of migrainous headache attacks.

METHOD

All patients who participated in this study were sourced from Al-Hindya General Hospital, karbala province, from 2016–2018, and they met the International Classification of Headache (ICH) criteria. They have repeated headache attacks lasting 4–72 hours, localized to one side of the head, pulsating quality, moderate or severe intensity, aggravation by routine physical activity, and association with nausea and/or photophobia and phonophobia. There were 150 patients at the beginning of the study, but only 124 patients were regularly followed up every month, their ages ranged from 35–49 years, and oral consent was obtained from them. At first, the headache criteria, such as the severity and frequency, were recorded using a well-

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organized questioner. The patients were randomly divided into two groups, A and B. Group A patients were administered with propranolol (Inderal) 20 mg twice daily, and group B patients received Flunarizine 5 mg/day at night.

Further, they all were followed up every month for three successive months using the same questioner asking them about the acuity and the frequency of headaches. The acuity of headache can be calculated as scale 1–3, 1: no effect on everyday activities, 2: for incomplete inhibition of daily activities, and 3: for loss of everyday actions. Statistical analysis done by SPSS 22, T-test, chi-square test, and Z test used, P-value considered significant whe less or equal to 0.05.

RESULTS

An experimental trial study on 62 patients who take drug A (propanol) and another 62 patients take drug B (Flunarizine) was conducted in Al-Hindya General Hospital, Karbala province, Iraq, with follow up of 3 months, the mean ages of patients in both groups was (29.65 ± 8.3) years old, 6% of them were males, and 94% of them were females (Table 1).

Table 2 demonstrates the differences between the mean of the severity of headache before intake, after 1 month, 2 months, and after 3 months intake of drug A and drug B, there was a significant reduction in the severety of migraine headache after 2 and 3 months intake of flunerazin.

The mean frequency of attacks before intake of drug A and drug B, after 1 month, 2 months, and after 3 months intake was established in Table 3. The frequency of migraine headaches was significantly reduced after 3 months of intake of drug B (flunarizine).

Table 1: Demographical data for both studying groups

Demographical data		*Group A*	*Group B*
Age (years)		30.5 ± 9	30.4 ± 9.3
Gender	Male	4 (6.5%)	3 (4.8%)
	Female	58 (93.5%)	59 (95.2%)
Mean of Severity of headache		2.61	2.68
Mean of frequency of headache		7.32	7.97

Table 2: Difference between the mean of the severity of headache before intake, after 1 month, 2 months, and after 3 months of administering drug A and drug B

Time	*Drug A*	*Drug B*	*p-value*
Pre intake mean	2.61	2.68	0.45
After 1 month intake mean	2.05	1.85	0.70
After 2 months intake mean	1.65	1.29	0.0001
After 3 months intake mean	2.31	0.92	0.0001

Mann-Whitney U test, P-value less than 0.05 (significant).

Table 3: Difference between the mean frequency of attack before intake, after 1 month, 2 months, and 3 months intake of drug A and drug B.

Time	*Drug A*	*Drug B*	*p-value*
Pre intake mean	7.32	7.97	0.71
After 1 month intake mean	6.39	6.27	0.88
After 2 months intake mean	5.31	3.90	0.013
After 3 months intake mean	3.94	2.62	0.0001

Mann-Whitney U test, p-value less than 0.05 (significant)

DISCUSSION

This experimental trial study included 124 patients who suffered from classical migraine headache, half of them (62) utilize 10 mg propranolol as a beta-blocker agent and classified as group A and another half (62) patients utilize 10mg Flunirazine as calicuim channel blocker and classified as group B, and both groups were followed up for 3 months regarding the severely and frequency of attacks of headache. Both types of drugs effectively reduced the frequency and severity of migraine headaches, but there was an excellent improvement in both, severity and frequency of migraine headache attacks in the group of patients utilizing Flunirazine drug. Both propanolo and Flunirazine are thought to be effective as prophylactive therapy for migraine headache through increment the threshold of neuronal hyperexitability, but Flunirazine was supposed firstly to keep a cerebral vasodilatation quality so lead to inhibit migraine on the supposition that vasoconstriction pledges the migraine procedure, it inhibit shrinkage of the smooth muscles of vessels and prevent prostaglandin creation by inhibition Ca^{++} dependent enzymes that responsible for creation it.[7] Since that migraine head ache is associated with neuronal activation, which is supposed to be due to cortical spreading activation (CSD) or a brainstem generator, so inhibition of CSD through blocking calcium channels also play important role in reduction headache attacks.[8] Maagdenberg and his coworkers (2004) state that calcium channels blockers prevent nitric oxide (NO) synthase in neuron and prevent hyperalgesia that consider the corner stone of pain of migraine.[9] Our results is consist with that of Luo et al. in which Flunirazine is thought to be effective as prophylactive therapy for migraine headache.[10]

CONCLUSION

Flunarizine drug is very effective drug as prophylactic to reduce the severity and frequency of the attacks of headach in those patients suffering from migraine.

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