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ORIGINAL ARTICLE

Can aspirin be Used as a Prophylactic Treatment in Migraine: a Double Blind Study in Upper Egypt

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Abstract

Background: Migraine is the second most prevalent neurological disease in the world. Women are ~3 times more likely than men to have migraine.

Aim: To evaluate the possible role of aspirin as a prophylactic treatment in patients with migraine.

Patients and methods: In this prospective study 67 patients presented with migraine with and without aura. All patients were subjected to both headache under-reaction to treatment (HURT) and Migraine Disability Assessment (MIDAS) questionnaire before the treatment and after the first, second, and third month of treatment.

Results: Sixty seven participants (31 male and 36 female). Their age ranged from 25 to 60 years old, divided into three groups received placebo, aspirin 325 mg, and 100 mg, (in group A, B, and C respectively). There is a reduction in frequency, duration, intensity and improvement of aura frequency in group B at the second and third month during the follow-up. There is a statistically significant differences in mean and standard deviation of headache under-reaction to treatment and migraine disability assessment questionnaire in group B than group C with no statistical significant differences in group A at second and third month during the follow-up.

Conclusion: Aspirin can reduce the frequency of migraines with 325 mg than 100 mg dosage of aspirin.

Keywords: Aspirin, Headache under-reaction to treatment and migraine disability assessment, Migraine

1. Introduction

Headache migraine is the most well-known and possibly weakening problems experienced by essential medical care suppliers. For instance, maybe 1 out of 10 essential consideration patients present with cerebral pain and 3 of 4 of these have migraine.¹

Headache happens in around 14 % of everybody with a higher predominance in ladies (18 %) than men (9 %). In ladies the pervasiveness is most elevated during childbearing age.²

Around 90 % of headache patients report moderate to serious agony, with more than half detailing extreme impedance or the requirement for bed rest as well as decreased work or school efficiency. From 1 to 5% of intense headache victims will foster intermittent headache cerebral pains, which are

related with higher morbidities and medical care costs.³

Headache patients frequently report specific triggers to their headache assaults, like brilliant lights, chocolate, and scents. The more probable circumstance is that a few patients are detailing excessive touchiness toward natural boosts as a feature of the sinister period of migraine.⁴

The recurrence and kinds of side effects experienced by headache patients with air has as of late been depicted. Visual peculiarities are generally normally detailed followed by tangible, discourse aggravations, and finally engine symptoms.⁵

Low-portion ibuprofen is overall progressively utilized in the optional avoidance of cardiovascular illness as well as in the essential anticipation of myocardial dead tissue in men. Since it is broadly utilized, safe, and economical, low-portion

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ibuprofen would be an appealing specialist to consider for prophylaxis against migraine.⁶

Therefore, our study aim to evaluate possible role of aspirin as a prophylactic treatment in patient with migraine. In the Upper Egypt noticed people sometimes treating themselves by green aspirin (packed in green paper) for all types of headache including migraine as they cannot affordable for other treatments of migraine the green aspirin may cost 30 EGP/month (i.e.>2 USA).

2. Patient and methods

The study was completed on short term Center of nervous system science division, Al-Azhar College, Personnel of Medication, Assiut. Concentrate on plan: A twofold visually impaired imminent observational review. Patients: 90 patients satisfied the symptomatic measures of the headache as per global grouping of migraine society The International Classification of Headache Disorders (ICHD)-3 in April 2021 to January 2022. Members were isolated into three gatherings: gathering A: 17 patients was gotten fake treatment, gathering B: 28 patients will get Headache medicine 325 mg/day. 3. Bunch C: 22 patients will get anti-inflammatory medicine 100 mg/day.

Patients who had headache assaults as per worldwide grouping of migraine society ICHD-3 and age greater than or equal to 18 years of age were incorporated; patients who less than 18 years old, auxiliary cerebral pain, earlier history of cerebrovascular sickness, do not exhibit great consistence during the preliminary attempt's in stage, responsiveness of anti-inflammatory medicine, gastrointestinal tract (GIT) issues or draining propensities, Asthmatic patients, pregnant ladies, nervousness or maniacal appearances and who would not partake in the review were avoided.

All patients were exposed to the accompanying; full neurological history and assessment,

examination of headache character including recurrence, length, agony and emanation as per ICHD-3, lab tests including complete blood count (CBC), Liver capability tests, kidney capability tests, coagulation profile when required, electroencephalography (EEG) checking when required, beginning appraisal with headache under-reaction to treatment (HURT) poLL (Supplement I) and headache handicap evaluation migraine disability assessment (MIDAS) (reference section II) prior to beginning the review and follow-up: in the first, second, third month after treatment by HURT survey and at third month by headache incapacity appraisal (MIDAS).

3. Results

There is reduction of frequency, duration, intensity, in addition to improvement of aura frequency at group B (received aspirin 325 mg/day) from seven patients to three in the second month during the follow-up, so four patients have changed from aura to become without aura. Also shows there is reduction of frequency, duration, intensity, in addition to improvement of aura frequency at group c (received aspirin 100 mg/day) one patient has changed from aura to become without aura, shows more efficacy of aspirin by dose 325 mg/day.

No measurable tremendous contrasts in patients of gathering A between pretreatment and post-treatment, Factual massive contrasts in patients of gathering B between pretreatment and post treatment and in patients of gathering C among pre-treatment and posttreatment.

No measurable tremendous contrasts in HURT-3 between pre-treatment and post treatment at 90 days in bunch A. Measurable tremendous contrasts in HURT-3, HURT-5 and HURT-8, between pre-treatment and post-treatment in bunch B and there is factual contrasts in HURT-3, HURT-5 and HURT-8, between pretreatment and post treatment in

Table 1. Clinical data in migraine patients.

	Group A (17)			Group B (28)			Group C (22)		
	1 month	2 month	3 month	1 month	2 month	3 month	1 month	2 month	3 month
Freq/month	16 ± 2	15 ± 3	14 ± 4	8 ± 2	4 ± 1	2 ± 1	8 ± 1	5 ± 1	4 ± 1
Duration/hours/ Attack	8.2 ± 1.2	7.5 ± 2	7 ± 2	3 ± 0.7	2 ± 0.6	1 ± 0.1	4 ± 1	2 ± 1	2 ± 0.0.3
Pain									
Mild	0	0	0	25	29	28	0	13	16
Moderate	0	4	4	5	0	0	25	12	6
Sever	26	18	13	0	0	0	5	0	0
Aura									
With aura	6	5	5	7	3	3	3	3	2
With-out aura	20	17	12	23	22 + 4	21 + 4	27	22	20

bunch C and there is stamped decrease in bunch B, than bunch C.

No statistical significant differences of all questions and total score of MIDAS before and after treatment at group A. While there is statistical significant differences in mean and standard deviation in Q1, Q2 and total score of MIDAS before and after treatment in group B also there is statistical significant differences in mean and standard deviation in Q1, Q2 and total score of MEDAS before and after treatment in group C with marked reduction in mean and standard deviation in patients group B than patients in group C (Tables 1–6).

Table 2. Comparison between characters of migraine before and after treatment among group A.

	Pretreatment Mean ± SD	Post treatment Mean ± SD	P-value
Group (A)			
1 Month			
Freq/Month	16.35 ± 2.3	16.3 ± 2.3	1.000
D/hrs./attack	8.5 ± 1.2	8.2 ± 1.2	0.500
Pain	3 ± 0	3.0 ± 00	1.000
Aura/min	22.5 ± 3.11	21.5 ± 2.11	0.26
2 Months			
Freq/Month	16.35 ± 2.4	15 ± 3.6	0.125
D/hrs/attack	8.53 ± 1.1	7.5 ± 1.9	0.125
Pain	3.00 ± 00	2.7 ± 0.43	0.063
Aura/min	22.5 ± 3.11	20.5 ± 1.11	0.088
3 Months			
Freq/Month	16.35 ± 2.4	14.5 ± 4.3	0.125
D/hrs/attack	8.53 ± 1.1	7.1 ± 2.4	0.063
Pain	3.00 ± 00	2.7 ± 0.43	0.125
Aura/min	22.5 ± 3.11	20.5 ± 1.11	0.088

Table 3. Comparison between characters of migraine before and after treatment among group B.

	Pretreatment Mean ± SD	Post treatment Mean ± SD	P-value
Group (B)			
1 Month			
Freq/Mon	16.11 ± 2.56	7.50 ± 1.64	0.000
D/hrs/attack	6.11 ± 1.37	2.75 ± 0.71	0.000
Pain	2.61 ± 0.49	1.11 ± 0.31	0.000
Aura/min	21.5 ± 2.11	12.5 ± 2.21	0.001
2 Month			
Freq/Mon	16.11 ± 2.56	3.61 ± 1.45	0.000
D/hrs/attack	6.11 ± 1.37	1.79 ± 0.69	0.000
Pain	2.61 ± 0.49	1.0 ± 0	0.000
Aura/min	21.5 ± 2.11	8.5 ± 1.21	0.001
3 Months			
Freq/Mon	16.11 ± 2.56	1.93 ± 0.6	0.000
D/hrs/attack	6.11 ± 1.37	0.93 ± 0.18	0.000
Pain	2.61 ± 0.49	1.0 ± 0	0.000
Aura/min	21.5 ± 2.11	5.5 ± 2.21	0.000

Table 4. Comparison between characters of migraine before and after treatment among group C.

	Pretreatment Mean ± SD	Post treatment Mean ± SD	P-value
Group (C)			
1 Month			
Freq/month	16.73 ± 2.27	8.32 ± 1.09	0.001
D/hrs/attack	7.73 ± 0.77	4.41 ± 0.67	0.05
Pain	2.68 ± 0.48	2.14 ± 0.35	0.03
Aura/min	20.5 ± 3.21	17.33 ± 2.71	0.09
2 Months			
Freq/month	16.73 ± 2.27	5.55 ± 0.81	0.001
D/hrs/attack	7.73 ± 0.77	2.68 ± 0.57	0.045
Pain	2.68 ± 0.48	1.50 ± 0.51	0.03
Aura/min	20.5 ± 3.21	14.11 ± 3.71	0.01
3 Months			
Freq./month	16.73 ± 2.27	4.09 ± 0.87	0.001
D/hrs/attack	7.73 ± 0.77	1.82 ± 0.39	0.043
Pain	2.68 ± 0.48	1.27 ± 0.46	0.02
Aura/min	20.5 ± 3.21	10.21 ± 3.11	0.000

Table 5. Comparison between parameters of headache under-reaction to treatment questioner at studied groups before and after treatment.

Questions	Pre	1 Month	2 Months	3Months	
	P-Value				
Groups (A and B)	Freq./Mon	0.759	0.000	0.000	0.000
	D/hrs.	0.000	0.000	0.000	0.000
	Pain	0.003	0.000	0.000	0.000
	Aura/min	0.02	0.016	0.015	0.01
Groups (A and C)	Freq./Mon	0.644	0.000	0.000	0.000
	D/hrs.	0.036	0.000	0.000	0.000
	Pain	0.092	0.000	0.000	0.000
	Aura/min	0.728	0.685	0.685	0.678
Groups (B and C)	Freq./Mon	0.380	0.044	0.000	0.000
	D/hrs.	0.000	0.000	0.000	0.000
	Pain	0.589	0.000	0.000	0.004
	Aura/min	0.11	0.048	0.049	0.031

Table 6. Comparison between parameters of migraine disability assessment questioner at studied groups before and after treatment.

	Pretreatment Mean ± SD	Post treatment Mean ± SD	P-value
Group (A)			
Group (A) HURT-3	5.59 ± 0.51	5.00 ± 1.22	0.125
Group (A) HURT-5	11.53 ± 1.07	7.29 ± 1.05	0.000
Group (A) HURT-8	17.12 ± 1.4	12.29 ± 2.08	0.000
Group (B)			
Group (B) HURT-3	5.71 ± 0.46	0.89 ± 0.32	0.000
Group (B) HURT-5	11.68 ± 1.02	1.54 ± 1.26	0.000
Group (B) HURT-8	17.39 ± 1.26	2.43 ± 1.34	0.000
Group (C)			
Group (C) HURT-3	5.73 ± 0.46	1.00 ± 0.00	0.000
Group (C) HURT-5	11.82 ± 0.91	3.32 ± 1.94	0.000
Group (C) HURT-8	17.55 ± 1.14	4.32 ± 1.94	0.000

4. Discussion

The pervasiveness of headache was more dominating in females 36 (54 %) patients than guys 31 (46 %) patients and this outcome is in concur with Rosario and Pinto,⁷ who said the predominance of headache is normal in females likewise this outcome predictable with El-Tallawy et al.,⁸ in Upper Egypt uncovered that the lifetime commonness of headache was 3.38/100 with male pervasiveness of 1.95/100 and female commonness of 4.8/100.

There was decrease in recurrence, length of assault, seriousness and quality term of headache after treatment at portion of ibuprofen 325 mg/day and four patients have headache with emanation totally vanished, this outcome concur with Anoaica et al.,⁹ who said the assaults recurrence of patients treated with ASA diminished fundamentally after treatment. Emanation term was especially decreased from pretreatment to after-treatment in 7 out of 95 air completely vanished and furthermore in reliable with the investigation of Baena et al.,¹⁰ who expressed that there was a huge decrease in recurrence of headache, which was diminished at an ibuprofen measurement of no less than 325 mg/day.

There is decrease in the recurrence of air at patients with headache getting anti-inflammatory medicine 325 mg each day and this could make sense of the significant job of ibuprofen in lessening the entanglement of quality while Turk et al.,¹¹ found astounding concealment of air recurrence by anti-inflammatory medicine prophylaxis 80 mg every day in headache with air and this distinction in outcome could that all patients in his review was female and more seasoned in age mean age was 57 years.

In the current review there is stamped decrease in the recurrence, term, force and length of quality at patients with headache getting ibuprofen 325 mg/day than patients got anti-inflammatory medicine 100 mg/day, this fractional predictable with Benseñor et al.,¹² who found on continuous randomized preliminary of low-portion headache medicine female wellbeing experts matured 45 and more established, 1001 ladies with successive headache assaults were allocated to 100 mg of headache medicine each and every other day.

There were critical decrease of mean and standard deviations between every one of the eight inquiries of Harmed examiner when treatment with ibuprofen by portion 325 mg/day more than with headache medicine 100 mg/day and this outcome could make sense of the improvement of side effects of headache on treatment with headache medicine 325 mg/day and this outcome intently concur with Westergaard et al.,¹³ who expressed investigation of

matched reactions to starting and last visit surveys of patients from each of the three communities showed patterns towards lower mean scores, and tremendous contrasts ($P < 0.001$) for all inquiries.

As to the HURT survey the HURT-3, showed a huge change ($P = 0.001$) towards progress in mean and SD from 5.71 ± 0.46 to 0.89 ± 0.32 at bunch B got headache medicine 325 mg/day and from 5.73 ± 0.46 to 1 ± 0.0 at gathering C got patients gotten ibuprofen 100 mg/day and this outcome intently concur with Westergaard et al.,¹³ who expressed Examination of scores at starting and last visits showed a massive change ($P < 0.001$) towards progress mean from 6.03 to 4.36. The HURT-5 there was clear distinction ($P < 0.001$) and a shift towards lower scores diminishes in mean and SD from 11.68 ± 1.02 to 1.54 ± 1.26 in patients getting headache medicine 325 mg and 11.82 ± 0.9 to 3.32 ± 1.94 in patients getting headache medicine 100 mg among introductory and last visits and this outcome concur with Westergaard et al.,¹³ who said There was a reasonable distinction ($P < 0.001$) and a shift towards lower score (diminishes in mean from 7.05 to 4.07) among starting and last visits in quiet gotten headache medicine 100 mg/day. HURT-8 showed a massive contrasts between scores ($P < 0.001$) at starting and last visits in mean and SD from 17.39 to ± 1.25 to 2.43 ± 1.34 in patients getting headache medicine in 325 mg and from 17.55 ± 1.14 to 4.32 ± 1.9 in patients getting ibuprofen 100 mg and this outcome concur with Westergaard et al.,¹³ who said It likewise showed a tremendous distinction between matched scores ($P < 0.001$) at beginning and last visits mean from 13.11 to 8.41. In the current review there was huge decrease seriousness of headache as per headache handicap appraisal score MIDAS after treatment with anti-inflammatory medicine 325 mg/day with diminish mean and SD from 34.9 ± 8.2 pretreatment to 4.9 ± 2.7 after treatment in understanding getting ibuprofen 325 mg everyday portion with decrease of mean and SD from 35.6 ± 7.9 pretreatment to 17.4 ± 4.7 after treatment with ibuprofen 100 mg day to day portion correlation with patients getting fake treatment and this could make sense of that the rising portion of anti-inflammatory medicine can lessen the inability of headache patients and this concur with Wintzer-Wehekind et al.,¹⁴ who said the seriousness of headache goes after continuously diminished over the long run; no moderate or extreme assaults happened at 3 month, 6 month, and 1 year ($P < 0.001$) in patients getting headache medicine. The job of ibuprofen in decline the seriousness of headache could be demonstrated by Rodes-Cabau et al.,¹⁵ who saw that as (aspirin + fake treatment) for quite a long time following ASD conclusion. The event and

seriousness of headache quality were assessed by an organized headache cerebral pain survey MIDAS at 1 and 3 month subsequent a sum of 171 patients were remembered for patients with headache air, those in the twofold antiplatelet bunch had less extreme headache emanation as assessed by the MIDAS test. No genuinely contrasts of seriousness of headache as/MIDAS score among sexes and results concur with Stewart et al.,¹⁶ who said that no measurably massive contrasts in MIDAS scores were seen by orientation or business status this in light of the fact that these discoveries recommend that the MIDAS score catches data about handicap that is not intrinsic to other migraine includes and is autonomous of orientation and work status.

No measurably contrasts of cerebral pain under reaction treatment HURT examiner among sexes and result concur with Westergaard et al.,¹³ who records of nonresponders were evaluated and there were no huge contrasts concerning age ($P = 0.28$) and orientation ($P = 0.15$) this in light of the fact that the HURT examiner can survey the finding and reaction to treatment however with no orientation or age connection. In the current review eight (9 %) patients out of 90 patients who experienced gas-tralgia during the month to month follow-up four patients at bunch B got anti-inflammatory medicine 325 mg/day and four patients at bunch C got aspirin 100 mg/day with no opposite aftereffect this outcome predictable with Biglione et al.,¹ somewhat great secondary effect profile of ibuprofen and very low expenses contrasted and other doctor prescribed drug treatments might give extra choices to essential medical services suppliers in the therapy of both intense and repetitive headache migraines.

4.1. Conclusion

Remarkable suppression of frequency, severity and aura by low dose aspirin in prophylaxis in migraine. Use of aspirin in prophylaxis of migraine patients in low socioeconomic locality. Aspirin dose 325 mg/day more effective than aspirin dose 100 mg/day in migraine prophylaxis. Aspirin is more effective in classic migraine than in common migraine.

Conflicts of interest

None declared.

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