

Is Migraine Treated Completely? A New Treatment Has Been Approached Successfully

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Abstract Objective: Migraine is one of the most frequent disabling neurological conditions and very bad headache with a major impact on the patient's quality of life. The objective of this study was to evaluate the effectiveness of Prednisolone in treating migraine. **Methods:** A cross sectional, hospital-based study was conducted. All patients (1020) were received Prednisolone 0.5 mg/kg/day for 7 days followed by tapering by 1 tablet (5 mg) every 7 days. The patients were followed minimally for six months after receiving treatment. **Results:** All patients responded to the treatment and all their associated symptoms disappeared. We think this approach is the best one for treating migraine. **Conclusion:** We think that our approach is the best one in treating migraine, so our recommendation is to use steroids (Prednisolone tablets, in a dose of 0.5 mg / kg/day for 7 days, followed by tapering by 1 tablet (5 mg) every 7 days) as a protocol for the treatment of migraine. The individual dose adjustment is required in certain cases. From this study we conclude that, firstly we can say we have got the answer of the big question: what is migraine. Secondly, we think we present a nice explanation of the vascular phenomenon associated with migraine. Number third, we introduce new common symptom associated with migraine. Lastly we introduce new and effective treatment for migraine.

Keywords: migraine, new, treatment, steroids

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1. Introduction

Migraine is one of the most frequent disabling neurological conditions and very bad headache with a major impact on the patient's quality of life [1,2,3,4]. Also migraine is a genetically influenced chronic brain condition marked by paroxysmal attacks of moderate-to-severe, throbbing headache with associated symptoms that may include nausea, vomiting, photophobia or phonophobia [5]. Migraine may occur as often as several times a week or only once every few years. It can last anywhere from a few hours to 3 days. The pain usually begins in the morning, on one side of the head. The amount of pain can vary. Some migraines can be fairly mild, while others seem to be unbearable. Other symptoms of migraine may include nausea and abdominal pain. There might be vomit or diarrhea. That's why migraine is often known as a "sick headache." [2,3]. Acute migraine attacks can be treated with oral non-steroidal Anti-inflammatory drug (NSAID) and triptans are recommended even for children and adolescents. Triptans are vasoconstrictors and therefore, are contraindicated in patients with coronary and cerebrovascular disease [6,7,8,9]. In very severe attacks, intravenous acetylsalicylic acid or subcutaneous sumatriptan are drugs used for the first choice. Also dihydroergotamine dihydroergotamine (DHE) (nasal spray,

intramuscular, or intravenous were used in low dose (0.5 – 1.0 mg)) [1,10,11,12]. Calcitonin gene-related peptide (CGRP) and CGRP receptors are expressed in trigeminal neurons that form C-fibers and A-fibers, respectively. In acute migraine and cluster headache attacks, there is release of CGRP into the cranial venous outflow. In addition, intravenous CGRP can induce migraine-like symptoms in migraine patients. These findings may lead to the development of anti-migraine therapies that inhibit CGRP action [13]. But all these drugs used for treating migraine did not relieve migraine symptoms completely. According to our best knowledge no previous studies were carried out using oral steroids as a treatment of migraine.

2. Methods

A cross sectional, descriptive hospital-based study was conducted at Doctors' Hospital, Khartoum State, Sudan, during 1 August 2015 and 31 December, 2016 to apply new protocol for migraine. 1020 patients, adults and children, male and female were included in the study. Personal and clinical data were collected using pre-tested questionnaires from patients after taking consent. Complete blood count (CBC), Random blood Sugar (RBS), Erythrocytes Sedimentation Rate (ESR) and C - Reactive protein (CRP) were performed for all patients

every week during treatment period. MRI, MRV, ANA profile 3, and other tests were performed for selected patients to exclude certain conditions that may be associated with migraine, like dural sinus thrombosis, systemic lupus erythematosus (SLE), rheumatoid arthritis (RA) and others, guided by history and examination especially the neurological one (exclusion criteria). All patients were received prednisolone tablets, in a dose of 0.5 mg / kg/day for 7 days, followed by tapering by 1 tablet (5 mg) every 7 days. Each tablet contains 5 mg. All patients were received oral proton pump inhibitor to guard against peptic ulceration. Blood pressure was routinely checked during the course of treatment. The follow up period was six months.

3. Statistical Analysis

Statistical analysis was performed using simple analysis.

3.1. Disclosure

Authors have no conflict of interests, and the work was not supported or funded by any drug company.

3.2. Ethical Consideration

This study was approved by ethical clearance committee, Faculty of Medicine Board, Karary University, Omdurman, Sudan.

3.3. Authors Contribution

MAM carried out the clinical work, MM helped in collecting data. MAM & MM helped in formatting and writing the manuscript. All authors read and approved the final version of this manuscript.

4. Results

Out of total 1020 patients, 992 (97.3%) were adult and 28 (5.7 %) were children, 265 (26 %) were male and 755 (74%) were female presented to the hospital during the study period and diagnosed as migraine after excluding other neurological problems were enrolled in the study. M-Y-M sign was positive in 989 (97 %) of patients, 998 (97.9%) presented with photophobia, 971 (95.2 %) phonophobia, 900 (88.2 %) had fatigability especially in early morning. Hair fall in 857 (84%), poor appetite in 775 (76%) patients, physical, mental and emotional stress in 887 (87%) patients, nonspecific complaints such as myalgia, arthralgia were in 418 (41%) of patients. Patients had sleep disturbances in form of interrupted sleep or difficulty to initiate sleep in 578 (56.7%) patients, abnormal sensory symptoms involving the side of the affected part of the head, facial, gloves and stockings pattern and carpal tunnel in 224 (22%) patients, menstrual cycle disturbances especially the amount of blood in 479 (63.5%) patients among females in the reproductive period. All patients completely responded to the treatment.

5. Discussion

In our study, we have observed some important symptoms of migraine, just like morning fatigue, loss of appetite, myalgia, arthralgia, forgetfulness, sleep disturbances and abnormal sensory symptoms are strongly associated with migraine. The association between M-Y-M sign [14] and migraine, led us to think that migraine might be some sort of neuropathy due to steroid deficiency, as the theory of this sign which is a form of hyperpigmentation due to excess melanocyte stimulating hormone (MSH) from the pituitary gland excreted when more amount of steroids are needed from the adrenal glands. We think that steroids have a key role in the metabolism of the nervous system and in the metabolism as general so we suggest studying the effect of using steroid for treatment of all types of nerve diseases (not only migraine) to improve the nerve function, especially in neuropathies. The remarkable response of migraine to steroid may support this point.

In our study we observed that stress is strongly linked with migraine, particularly in females like work stress; menstrual cycle and social troubles (with husbands, children, over-exhaustion...etc.). Females are more prone to migraine. Stress consumes more steroids (steroids are known as stress hormones). This strong association of migraine with stress again may support the idea that migraine is some sort of neuropathy due to steroid deficiency.

The vascular phenomenon in migraine (for which triptans are used) may be best explained by the affection of the autonomic fibers that control these vessels, and the affection of these fibers also can explain the ocular autonomic manifestations that associated with migraine. This neuropathy of the scalp nerves may explain the local tenderness on the head (some patients cannot even comb their hair due to this tenderness). The area of the affected nerve determines whether the migraine is unilateral, bilateral or alternating. It can also explain the known triggering factors that irritate the diseased nerve like noises, lights, trauma, cold weather...etc. Interestingly we observed improvement of memory and concentration of our patients indicating that in the future steroids may have a role in treating dementia. The short duration of steroid minimizes its complications. It is worth to mention that the satisfaction of the patients was very high to this type of treatment in comparison to their previous experience with the drugs they used to take.

6. Conclusion

We think that our approach is the best one in treating migraine, so our recommendation is to use steroids (Prednisolone tablets, in a dose of 0.5 mg / kg/day for 7 days, followed by tapering by 1 tablet (5 mg) every 7 days) as a protocol for the treatment of migraine. The individual dose adjustment is required in certain cases. From this study we conclude that, firstly we can say we have got the answer of the big question: what is migraine. Secondly, we think we present a nice explanation of the vascular phenomenon associated with migraine. Number third, we introduce new common symptom associated

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