CASE REPORT

A Patient-centered Approach to Management of Migraine in Primary Care

STEPHEN TETTEH ENGMANN*, DEBORAH YESUTOR GADZEKPO†

ABSTRACT

Background: Primary care physicians are in a prime position to enhance the diagnosis and treatment of migraine for a large number of patients since they see a large number of migraine patients for the first time in these settings. **Case report:** This is a case report of a young woman with a known history of migraine headaches with aura who presented to the Emergency Unit of a primary care facility with complaints of severe headaches, which were not improving after long-term use of herbal preparations. The onset of her symptoms was associated with generalized weakness, loss of appetite, nausea and seizure of the right side of the upper body lasting for 10 seconds, which was self-limiting. There was no associated vomiting or dizziness. The initial workup included a computed tomographic (CT) scan of the head and an electroencephalogram (EEG), which were unremarkable. The patient's perspectives were explored and patient-centered approaches were employed to manage the patient with analgesics and oral amitriptyline and propranolol combination as a migraine prophylaxis. **Conclusion:** A patient-centered approach to care can be a crucial strategy for efficient migraine treatment once a patient has been diagnosed with the condition.

Keywords: Migraine with aura, primary care, patient-centered

Migraine is a widespread condition that negatively impacts the well-being and health of numerous individuals, having a significant impact on their loved ones, families, and the community[1]. Migraine is a major source of disability, and in terms of years lived with disability, it ranks second globally among all disorders after low back pain[1-3]. It is among the most prevalent, but potentially debilitating, conditions seen in primary care[4,5]. Primary care physicians are in a prime position to enhance diagnosis and migraine treatment for a large number of patients since they see a large number of migraine patients for the first time in these settings[5]. Migraine aura-triggered seizures are among the rare complications of migraine[6]. The cornerstone of acute migraine management is medication therapy[7]. However, to prevent new-onset development, it is crucial to carefully manage migraine using a personalized, patient-centered approach that includes education, lifestyle modifications, and optimized therapeutic and nonpharmacologic measures[8]. This article describes a case of migraine complicated with migraine aura-triggered seizures and offers practical patient-centered approaches to the management of migraine in a primary care setting.

CASE PRESENTATION

A 23-year-old woman with a known history of migraine headaches with aura presented to the Emergency Unit of a primary care facility in Ghana with complaints of severe headaches of 2 days duration. The severity of the headache on the numeric pain scale was between 8 and 9 out of 10. There were no relieving factors but the patient had a history of visual disturbances and photophobia as well as phonophobia, which exacerbates the headache. The visual disturbances were described as seeing shimmering spots or stars as well as flashes of light. The quality of her headache was described as being continuous, and pulsatile in nature. The onset of her symptoms was associated with generalized weakness, loss of appetite, nausea, and seizure of the right side of the upper body lasting for 10 seconds, which was self-limiting. There was no associated vomiting or dizziness. She had experienced 2 episodes of seizure

*Senior Specialist Family Physician, Family Medicine Unit, Manna Mission Hospital, Accra-Ghana
†Senior Medical Officer, School of Biomedical and Allied Health Sciences, University of Ghana
Address for correspondence
Dr Stephen Tetteh Engmann
Senior Specialist Family Physician
P. O. Box TN 1032, Teshie-Nungua Estates, Accra
E-mail: stephenengmann@gmail.com

prior to presentation at the facility but did not have post-ictal confusion. The patient had no fever, chills, or abdominal pain and the review of other systems was unremarkable. She had numbness but denied sensitivity to smell, and there were no other neurologic deficits such as nuchal rigidity, focal weakness, double vision, or slurred speech.

She had used some herbal preparations prior to the onset of her symptoms without any improvement. The patient admitted to experiencing typical migraine headaches more than twice a year. The last episode was about a year before her current presentation, when she was treated with herbal medications and had some improvement. She still experienced the headaches intermittently with lower severity.

The patient's perspective was that she had some fears about having migraine and the presenting acute headache was unbearable and made her feel anxious. She had been told in the past it was migraine and the use of herbal preparations had not helped in recent times, hence she reported to the hospital. In this current episode, she had not been able to work and had pending jobs to deliver to her clients. She expected to have a resolution of the headache.

On general physical examination, the patient was afebrile (temperature 36.2°C), had no conjunctival pallor, was not jaundiced and weighed 102 kg with a height of 1.75 m giving a body mass index (BMI) of 33.3 kg/m^2. On examination of the cardiorespiratory system, her blood pressure (BP) was 118/72 mmHg with a peripheral pulse rate of 74 beats per minute, regular, with good volume. Her respiratory rate was 18 cycles per minute with no signs of acute distress. On chest auscultation, the air entry was adequate bilaterally, with vesicular breath sounds and no added sounds. Abdominal and neurological examinations were unremarkable. She was conscious, alert, and oriented in person, place and time. Her pupils were normal in size, and reactive to light; other cranial nerve examination was unremarkable.

The initial workup included a computed tomographic (CT) scan of the head, and blood work including full blood count, fasting blood glucose, blood film for malaria parasites, liver function test, kidney function tests with serum electrolytes, and erythrocyte sedimentation rate (ESR), which were all normal. She was admitted and managed with intravenous normal saline, acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) combination. Intravenous diazepam was on standby to abort any seizure that could have been experienced. The patient was educated about migraine, the treatment options, self-management strategies, the possible triggers of acute attacks, the importance of avoiding medication overuse including herbal preparations and the need to receive long-term treatment with migraine prophylaxis. Through shared decision-making, she was started on oral amitriptyline and propranolol combination before discharge. Her anxiety associated with the acute headache attacks was allayed. The modified 5A (ask, assess, advise, agree, and assist) model was adopted for obesity counseling and management[9]. Her mother who was her family caregiver was educated about migraine and her role in the patient experience was addressed. The patient was discharged from the ward following the resolution of her headache and other visual symptoms. Her care was coordinated through a referral to a neurologist for a consult and an electroencephalogram (EEG) workup and she was advised to return for review in 2 weeks.

Follow-up and outcomes: The patient had no complaints after 2 weeks and was feeling better after starting the treatment. She was well-looking and stable. Vital signs were as follows: respiratory rate - 18 cpm, temperature - 37.1°C, BP - 120/75 mmHg, and pulse rate - 80 bpm. The EEG done by the neurologist was normal; no focal, diffuse or generalized abnormalities were noted. Her mother came along with her and confirmed that there had been some improvement in the patient. The migraine education and weight loss strategies discussed during her admission were reinforced. The migraine prophylaxis was continued and she was scheduled for a follow-up in 1 month and has since been doing well after several follow-up visits.

DISCUSSION

General Principles in the Management of Migraine

In-depth patient education and a comprehensive physician understanding of different treatment choices and techniques are necessary for the successful management of migraine[10]. Acute and prophylactic medications, lifestyle modifications, and migraine self-management techniques are all part of comprehensive migraine therapy[3]. Prophylactic medication for migraine is indicated when recurrent migraine attacks are causing considerable disability, recurrent attacks with prolonged aura, and when there are contraindications to acute migraine medications, which make symptomatic treatment of attacks difficult[3]. This patient had recurrent migraine attacks causing considerable disability, with attacks having prolonged aura and was thus started on oral amitriptyline and propranolol combination.

A randomized controlled trial has shown that the combination of propranolol and amitriptyline is more efficacious in preventing migraines than amitriptyline used alone[10]. Evaluation of response to treatment and management of failure involves the use of headache calendars, assessing the effectiveness and adverse effects of therapy, and re-evaluating before changing treatment when it fails[11].

Patient-centered Approach

A person-centered approach means "focusing on the elements of care, support, and treatment that matter most to the patient, their family and carers"[12]. There are several patient-centered approaches in the treatment of acute migraine headaches.

Individualized treatment plans: It is important to tailor treatment plans to each patient based on their specific needs and preferences[4]. It is important for the health care provider to assist patients in developing coping mechanisms for the difficult-to-avoid triggers[13]. In addition, it is advised that patients control their weight if obese, manage their comorbidities, modify their lifestyle, be educated, keep headache diaries, and increase their understanding of the condition as components of migraine management[13].

Shared decision-making: In a patient-centered approach to care, shared decision-making between health care providers and patients to determine the most suitable treatment approach for each individual is encouraged. Shared decision-making was employed in the management of this patient. Migraine patients should be involved in managing their condition. It is important to involve patients in decisions regarding their treatment, including a discussion about the risks and benefits of different therapeutic options that align with the patient's preferences and goals[4]. These patients are key decision-makers and their input is required for headache management since it works best when they are actively involved in their therapy[14].

Patient education: Patient-centered approaches also involve providing patients with comprehensive education about their condition, treatment options, and self-management strategies to empower them in managing their migraines effectively. Providing patients with information on the potential risks of overusing medications for acute migraine relief can help prevent medication overuse headaches and optimize the effectiveness of acute treatments[5]. As seen in this case report, patient education was an integral part of the management of this patient.

CONCLUSION

Patient-centered approaches aim to enhance patient satisfaction, improve treatment adherence, and ultimately optimize outcomes in managing migraine headaches. A patient-centered approach to care can be a crucial strategy for efficient migraine treatment once a patient has been diagnosed with the condition. Treatment planning and execution should prioritize the most significant and practical actions. In order to achieve optimal clinical treatment, therapeutic techniques must acknowledge the unique clinical features, preferences, and needs of each patient, avoiding the use of a generalized strategy.

REFERENCES

1. Ashina M, Katsarava Z, Do TP, Buse DC, Pozo-Rosich P, Özge A, et al. Migraine: epidemiology and systems of care. Lancet. 2021;397(10283):1485-95.
2. Curter M. Pathophysiology, clinical manifestations, and diagnosis of migraine in adults. UpToDate. Published 2020. Available from: https://www.uptodate.com/contents/pathophysiology-clinical-manifestations-and-diagnosis-of-migraine-in-adults?search=migraineaura-triggered Seizures&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1. Accessed March 4, 2024.
3. Becker WJ, Findlay T, Moga C, Scott NA, Harstall C, Taenzer P. Guideline for primary care management of headache in adults. Can Fam Physician. 2015;61(8):670-9.
4. Gilmore B, Michael M. Treatment of acute migraine headache. Am Fam Physician. 2011;83(3):271-80.
5. Martin VT, Feoktistov A, Solomon GD. A rational approach to migraine diagnosis and management in primary care. Ann Med. 2021;53(1):1979-90.
6. Plato BM. Rare complications of migraine with aura. Headache. 2016;56(8):1373-9.
7. Ashina M, Buse DC, Ashina H, Pozo-Rosich P, Peres MFP, Lee MJ, et al. Migraine: integrated approaches to clinical management and emerging treatments. Lancet. 2021;397(10283):1505-18.
8. Lipton RB, Buse DC, Nahas SJ, Tietjen GE, Martin VT, Löf E, et al. Risk factors for migraine disease progression: a narrative review for a patient-centered approach. J Neurol. 2023;270(12):5692-710.
9. Vallis M, Piccinini-Vallis H, Sharma AM, Freedhoff Y. Clinical review: modified 5 As: minimal intervention for obesity counseling in primary care. Can Fam Physician. 2013;59(1):27-31.
10. Islam MA, Shaikh AK, Alam SkM, Sultana D, Islam MS, Rashid MM. Safety & efficacy of propranolol and amitriptyline combination therapy in migraine prophylaxis: a randomized control trial. J Natl Instit Neurosci Bangladesh. 2018;4(1):3-7.

11. Eigenbrodt AK, Ashina H, Khan S, Diener HC, Mitsikostas DD, Sinclair AJ, et al. Diagnosis and management of migraine in ten steps. Nat Rev Neurol. 2021;17(8):501-14.
12. The Health Foundation. Person-centred care made simple: What everyone should know about person-centred care. 2016.
13. Haghdoost F, Togha M. Migraine management: non-pharmacological points for patients and health care professionals. Open Med (Wars). 2022;17(1):1869-82.
14. Peters M, Abu-Saad HH, Vydelingum V, Dowson A, Murphy M. Patients' decision-making for migraine and chronic daily headache management. A qualitative study. Cephalalgia. 2003;23(8):833-41.

■■■■

Clinical Outcomes of Early Discharge after Cessation of Oxygen Therapy

Early discharge of patients, within 4 hours, after stopping oxygen therapy reduced the time to discharge and was associated with shorter hospitalizations with no increase in rate of readmissions. Early discharge was also safe. These findings were published in *The Journal of Paediatrics and Child Health*[1].

This retrospective single-center study aimed to investigate the safety of discharging bronchiolitis patients 4 hours after cessation of oxygen therapy. For this they included 884 children, aged 0 to 24 months, admitted with bronchiolitis to the single center during 2018 and 2019. Of these, 462 were admitted in 2018 and 422 were hospitalized in 2019. Relevant data for the study was collated retrospectively from medical records. The rate of readmissions and clinical reviews/rapid responses after discharge were compared to the pre-implementation period in 2018.

There was a significant reduction in the median time to discharge post-oxygen cessation in 2019 compared to the pre-implementation period in 2018. The median time decreased by 87 minutes (vs. 423 minutes). Similarly, there was a significant reduction in the median duration of hospitalization in 2019 compared to 2018. The median length of stay decreased by 6.7 hours (vs. 1.83 days).

However, there were no significant differences in the rate of readmissions between 2018 and 2019 (0.6% vs. 1.4%). In both 2018 and 2019, there were instances of clinical reviews or rapid responses post-cessation of oxygen therapy, respectively.

In 2018, 18 patients were discharged within 4 hours of oxygen therapy cessation, while in 2019, 71 were discharged within this time period. Among the patients discharged within 4 hours of oxygen therapy cessation, there were no readmissions, clinical reviews, or rapid responses in the 2019 cohort.

The findings of this study suggest that implementing a protocol recommending discharge home 4 hours after cessation of supplemental oxygen therapy for bronchiolitis patients was safe and did not lead to an increased risk of adverse events. Despite the shorter length of hospital stay and faster discharge process in the early discharge group in the post-implementation period, there was no significant difference in the rate of readmissions between the two cohorts.

The feasibility of the new protocol may impact clinical practice leading to more efficient utilization of health care resources while ensuring patient safety. However, these findings need to be further validated in future studies.

Reference

1. Gilbert Y, et al. Duration of monitoring after cessation of oxygen therapy in infants with bronchiolitis. J Paediatr Child Health. 2023;59(11):1223-9.