

Migraine in Women: What Specificities? A Review

Boubacar S¹, Seck LB¹, Assadeck H², Diallo IM¹, Cisse O¹, Ntenga P¹, Adji DB³, Diagne NS¹, Maiga DD⁴, Akehossi EO^{2,3}, Maiga Y⁵, Touré K¹, Ndiaye M¹, Diop AG¹ and Ndiaye MM¹

¹Department of Neurology, Fann National Teaching Hospital, Dakar, Senegal

²Faculty of Health Sciences, Abdou Moumouni University, Niamey, Niger

³Department of Medicine, National Hospital, Niamey, Niger

⁴Faculty of Health Sciences, Dan Dicko Dakoulo University, Maradi, Niger

⁵Department of Neurology, Gabriel Touré University Hospital, Bamako, Mali

*Corresponding author: Boubacar S, Department of Neurology, Fann National Teaching Hospital, Dakar, Senegal, Tel: +221 777514875; E-mail: abounadjma@yahoo.fr

Received date: December 26, 2016; Accepted date: December 30, 2016; Published date: January 20, 2017

Copyright: © 2017 Boubacar S, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

The migraine is a chronic neurological disease that affects 10 to 12% of the population, with a clear preponderance females and this from puberty. The women report a longer attack duration. Presence and severity of associated symptoms, such as photophobia, phonophobia, nausea, vomiting, and cutaneous allodynia are more prevalent in women. Some clinical forms are well described as catamenial migraine. Several comorbidities have been described in migraine women. Among these diseases associated with migraine: vascular diseases, asthma, allergies, epilepsy, restless legs syndrome, and various chronic pain syndromes and psychiatric disorders. Treatment of migraine in women raises the difficulty of managing seizures and during pregnancy and the period of menstruation. The therapeutic difference mainly concerns menstrual migraine. In women with migraine, it is therefore recommended to be particularly attentive to comorbidities, the presence of which significantly increases the risk of arterial vascular events. Migraine is very common with a particular impact on the quality of life of women. These various specificities and their evolution over time must lead to continuous training of general practitioners, other specialists in women's health including gynecologists in order to reduce the morbidity of the disease by better prevention of crises through the harmonization of research by scientific societies from different continents.

Keywords: Migraine; Women; Clinical; Therapeutic; Specificities

Introduction

Migraine is two to three times more prevalent in women than men [1-3] and women report a longer attack duration [1]. Indeed, the hormonal phenomena of the woman are incriminated in this specificities because epidemiologically this difference in prevalence by sex do not exist before the puberty and decrease in the woman in menopause [4,5]. Migraine prevalence was lower in African Americans than in Caucasians in the American Migraine Study, though differences were statistically significant for males only [6].

It is a chronic neurological disease that affects 10 to 12% of the population, with a clear preponderance females and this from puberty [2] despite the fact that 95% of these patients return home with a diagnosis of benign primary headache, the attending physician must be able to detect secondary and potentially dangerous headache that requires referral [7-9]. Because the migraine is a disabling disease that can alter the quality of life of patients, disrupt emotional relationships and affect school and work activities [3].

This female feature of migraine has its place in the chronic form of migraine which must be distinguished from other types of migraine according to the last classification 2013 of the International Headache Society HIS [10] (Figure 1).

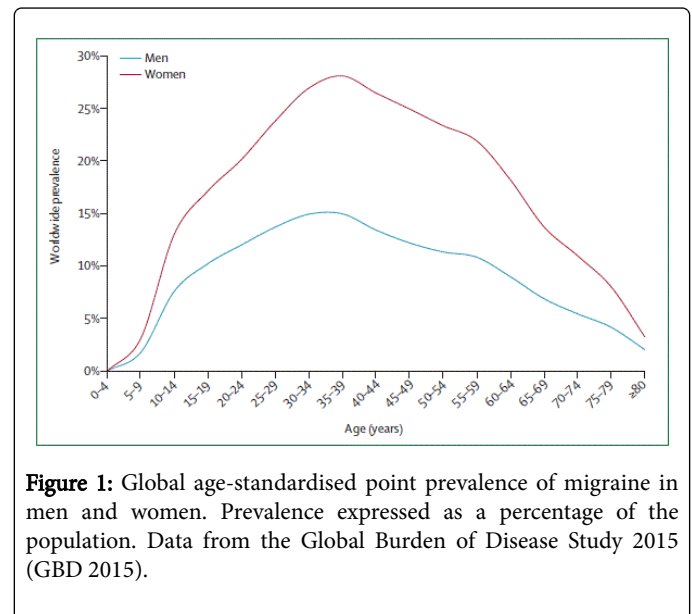


Figure 1: Global age-standardised point prevalence of migraine in men and women. Prevalence expressed as a percentage of the population. Data from the Global Burden of Disease Study 2015 (GBD 2015).

We present here a review of the specificities of migraine in women by raising hormonal issues, frequency, duration of attacks, clinical, disabling comorbidities, management during menstruation, and cost of migraine.

Clinical Features

Presence and severity of associated symptoms, such as photophobia, phonophobia, nausea, vomiting, and cutaneous allodynia are more prevalent in women [11-13] but with some exceptions [14]. Research suggests that women have more frequent, longer lasting, and more severe headaches than men [15] although some studies show that Pain intensity and attack frequency tend to be similar in men and women [16].

However the most constant finding is that women report longer duration of migraine attacks than men [17]. Some clinical forms are well described as catamenial migraine. It is defined as a migraine without aura occurring between 2 days before and 3 days after the menstrual cycle. The catamenial migraine is said to be "pure" when it occurs at least during 2 cycles out of 3 during this period and exclusively. On the other hand, "related migraine to the rules" is defined when it occurs at least during 2 cycles out of 3 during this period and that crises are also observed during the rest of the cycle [2]. If nearly 50% of migraine women seem to correlate between migraine and menstruation, only 10% of them have migraines exclusively related to menstruation [18]. The catamenial migraine seizures have a more severe pain intensity and are longer, more disabling, less responsive to crisis treatments [19].

Specific Comorbidities

Several comorbidities have been described in migraine women. Among these diseases associated with migraine: vascular diseases, asthma, allergies, epilepsy, restless legs syndrome, and various chronic pain syndromes and psychiatric disorders [20]. However, studies on sex differences of these comorbid diseases are few and report conflicting results [1]. The vascular risk of migraine is scientifically well established [21]. Isolated cases [22] of migraine patients with stroke and cohorts have been reported in the literature [23]. However, the absolute risk remaining low for migrant women: around 17-19 per 100,000 women per year [21] also over 45 years of age, migraine is not considered a factor

Risk of stroke [24] if the arterial vascular risk is reinforced with the progestin-only pill, there are no data with the use of progesterone or with the IUD (intrauterine device) [2].

Data from a Danish questionnaire survey of 46 418 twins suggest that there is a sex difference in the number and types of comorbid disorders associated with migraine. Women with migraine had a greater number of comorbid diseases compared with men (11 vs. 5) [25].

Therapeutic Aspects

Treatment of migraine in women raises the difficulty of managing seizures and during pregnancy, lactation and the period of menstruation.

However, guidelines for the acute and prophylactic management of migraine do not address the differential management of men and women, with the exception of the management of menstrual migraine [26-28]. Improvements in lifestyle, eating behavior and the identification of modifiable predisposing and triggering factors, in particular using a diary, are the first recommended measures in the management of the migraine patient [29].

The current recommendations do not suggest a therapeutic difference between women and men except for menstrual migraine which requires prevention or a hormonal alternative [27,28]. The reported sex differences in migraine attack duration could reflect real phenotypical differences, but might also relate to different responses to treatment between men and women [30]. The therapeutic difference mainly concerns menstrual migraine. This form of migraine requires early treatment to be effective [31]. The trial of minor analgesics such as paracetamol usually results in failure. On the other hand, data from placebo studies show the usefulness of triptans (sumatriptan 50 or 100 mg, Rizatriptan 10 mg and combination sumatriptan-naproxen 85/500) and other non-steroidal anti-inflammatory drugs [32].

The combination of sumatriptan (8 mg) and naproxen (500 mg) effectively treated migraine in 50% of women, compared to 22% for placebo, with the considerable advantage of reducing dysmenorrhea [31]. Mefenamic acid is the preferred anti-inflammatory 500 mg every 8 hours during the days of menstruation. It is better tolerated [31]. The route of administration for this treatment of crises must be adapted according to the state of the woman (injection, rectal or oral route), taking into account also the financial accessibility.

The prevention of menstrual migraine requires estrogen-based hormone therapy [2,33], because there is a link between this form of migraine and the decrease of the level of this hormone [2]. This prevention is confirmed by studies through the essential role of percutaneous estrogens at the dose of 1.5 mg per day started 2 days before the expected date of the crisis and continued 7 days [33]. Catamenial migraine may also occur in the window of interruption of combined estrogen-progestative contraceptives [2]. In the event of a migraine with aura, a definitive stop of contraception estrogen-progestative drug is necessary because of the increased risk of cerebrovascular disease [34].

Concerning pregnancy and lactation, migraines affect one in every five women in their reproductive years (2017) [35].

While most migraines improve during pregnancy, having a history of migraine may increase the risk of negative maternal and fetal health outcomes during pregnancy [36].

A large longitudinal cohort study of 2434 pregnant women showed that those with a history of headache prior to pregnancy were at greater risk of experiencing headache during pregnancy [37]. There are many available treatment options for migraine during pregnancy/lactation, so patients can be reassured that they will not suffer in pain during pregnancy. Preconception planning is the first important step for patients with migraines.

This can help establish non-pharmacological treatment regimens prior to pregnancy and develop a strategy for safe use of other options during pregnancy. As many drugs are most dangerous during the first trimester when a pregnancy may not be known, women on migraine preventatives should consider tapering off such drugs and decreasing use of unsafe abortive options during pregnancy planning (Table 1) [36].

S. No	Treatment options
1.	Non-pharmacologic treatment options
a.	Healthy lifestyle habits
b.	Behavioral treatment options (relaxation training, Cognitive behavioral therapy, biofeedback, stress management training)

c.	Mind-body treatment options (meditation, yoga)
2.	Pharmacologic options
3.	Dietary supplements
4.	Procedure based treatment options
a.	Physical therapy
b.	Acupuncture
c.	Nerve Therapy

Table 1: Overview of the treatment options during pregnancy/lactation for migraine [36].

In women with migraine, it is therefore recommended to be particularly attentive to comorbidities, the presence of which significantly increases the risk of arterial vascular events, such as dyslipidemia, diabetes mellitus, obesity, smoking or high blood pressure (hypertension). Specific treatment of these conditions should therefore be undertaken before the prescription of an oestro-progestin-only contraceptive [2].

Data from the literature concerning ergot alkaloid in this context do not produce convincing results, and the latter are less and less prescribed since the appearance of triptans. Finally, it will often be necessary to associate of the crisis of the adjuvant therapies will be antiemetics or anxiolytics in case of superimposed symptoms [31].

In the United States in 2016, the annual and per person cost of migraine is estimated at US \$2,649 for episodic migraine [38]. In Europe, this cost is estimated at €1222 [39,40]. Migraine burden is bound to increase by more than 10% DALYs within the next decade [41].

In Africa, we observe in daily practice that many women have difficulties in continuing their treatment because of the high cost of direct and indirect care. However, some stop treatment because of the chronicity of the disease in some areas in an African social and religious culture that does not accept a disease without etiological treatment.

Specific Disabilities

The Global Burden of Disease Study 2015 ranks migraine as the fourth leading cause of years lived with disability for women and the eighth leading cause for men of all ages [42].

Even though many studies report the same average pain intensity between sexes, women consistently report higher headache-related disability than do men [30,43-45]. European studies have shown higher MIDAS scores and higher disability in women, but sex differences in the individual criteria have not been reported [17,45,46,47].

The duration of migraine-associated activity restriction is also greater among women than in men, [47] possibly because of the longer duration of attacks and higher relapse rate. Finally, acceptance of migraine facilitates patient empowerment by allowing focus on the task at hand, reducing attack vulnerability and attack related disability [48].

Conclusion

Migraine is very common with a particular impact on the quality of life of women. Clinical and therapeutic specificities and their evolution over time must lead to continuous training of general practitioners, other specialists in women's health including gynecologists in order to reduce the morbidity of the disease by better prevention of crises through the harmonization of research by scientific societies from different continents.

References

1. Vetvik KG, MacGregor EA (2016) Sex differences in the epidemiology, clinical features, and pathophysiology of migraine. *Lancet Neurol* 16: 76-87.
2. Giraud P, Chauvet S (2010) Neurologist: The Neurologist's Letter by Edimark.fr XIV: 9.
3. Maiga Y, Boubacar S, Kanikomo D, Cissoko Y, Diakite S, et al. (2011) School-based migraine in Gao ua Mali. *Afr J Neurol Sci* 30: 49-55.
4. Abu-Arefeh I, Russell G (1994) Prevalence of headache and migraine in schoolchildren. *Br Med J* 309: 765-769.
5. Raieli V, Raimondo D, Cammalleri R, Camarda R (1995) Migraine headaches in adolescents: a student population-based study in Monreale. *Cephalalgia* 15: 5-12.
6. Stewart WF, Lipton RB, Celentano DD, Reed ML (1992) Prevalence of migraine headache in the United States. Relation to age, income, race, and other sociodemographic factors. *JAMA* 267: 64-69.
7. Goldstein JN, Camargo CA, Pelletier AJ, Edlow JA (2006) Headache in United States emergency departments: demographics, work-up and frequency of pathological diagnoses. *Cephalalgia* 26: 684-690.
8. Pari E, Rinaldi F, Gipponi S, Venturelli E, Liberini P, et al. (2015) Management of headache disorders in the emergency department setting. *Neurol Sci Off J Ital Neurol Soc Ital Soc Clin Neurophysiol* 36: 1153-1160.
9. Moisset X (2016) French guidelines for the emergency management of headaches. *Revue neurol* 172: 350-360.
10. Headache Classification Committee of the International Headache Society (IHS) (2013) The international classification of headache disorders. *Cephalalgia* 33: 629-808.
11. Wang SJ, Fuh JL, Juang KD, Lu SR (2005) Rising prevalence of migraine in Taiwanese adolescents aged 13-15 years. *Cephalalgia* 25: 433-438.
12. Bolay H, Ozge A, Saginc P (2015) Gender influences headache characteristics with increasing age in migraine patients. *Cephalalgia* 35: 792-800.
13. Murtaza M, Kisan M, Daniel H, Sonawalla AB (2009) Classification and clinical features of headache disorders in Pakistan: a retrospective review of clinical data. *PLoS One* 4: e5827.
14. Wober-Bingol C, Wober C, Karwautz A (2004) Clinical features of migraine: a cross-sectional study in patients aged three to sixty-nine. *Cephalalgia* 24: 12-17.
15. Boardman HF, Thomas E, Croft PR, Millson DS (2003) Epidemiology of headache in an English district. *Cephalalgia* 23: 129-137.
16. Buse DC, Loder EW, Gorman JA (2013) Sex differences in the prevalence, symptoms, and associated features of migraine, probable migraine and other severe headache: results of the American Migraine Prevalence and Prevention (AMPP) Study. *Headache* 53: 1278-1299.
17. Franconi F, Finocchi C, Allais G (2014) Gender and triptan efficacy: a pooled analysis of three double-blind, randomized, crossover, multicenter, Italian studies comparing frovatriptan vs. other triptans. *Neurol Sci* 35: 99-105.
18. Martin VT, Behbehani M (2006) Ovarian hormones and migraine headache: understanding mechanisms and pathogenesis, part I and II. *Headache* 46: 3-23.
19. MacGregor EA (2007) Menstrual migraine: a clinical review. *J Fam Plann Reprod Health Care* 33: 36-47.

20. Tietjen GE, Herial NA, Hardgrove J, Utley C, White L (2007) Migraine comorbidity constellations. *Headache* 47: 857-865.
21. Bousser MG, Welch KMA (2005) Relation between migraine and stroke. *Lancet Neurology* 4: 533-542.
22. Boubacar S, Diagne NS, Adji DWB, Lamou EGB, Ngarndiguina CM (2016) Cerebellar infarction associated with a patent foramen ovale revealed by wallenberg syndrome during a migraine attack. *AJPN* 4: 76-78.
23. Woodward M (2009) Migraine and the risk of coronary heart disease and ischemic stroke in women. *Womens Health (Lond Engl)* 5: 69-77.
24. Bousser MG, Conard J, Kittner S, De Lignières B, MacGregor EA (2000) Recommendations on the risk of ischemic stroke associated with use of combined oral contraceptives and hormone replacement therapy in women with migraine. The International Headache Society Task Force on Combined Oral Contraceptives & Hormone Replacement Therapy. *Cephalalgia* 20: 155-156.
25. Le H, Hansen PT, Russell MB, Skyttthe A, Kyvik KO, et al. (2011) Comorbidity of migraine with somatic disease in a large population-based study. *Cephalalgia* 31: 43-64.
26. Minet ML (2010) Migraine and pregnancy: how to manage crises? The course to be taken in pregnant migraine women and during breastfeeding. *Neurologies* 13: 126.
27. Minet ML, Valade D, Geraud G, Lucas C, Donnet A (2014) Revised French guidelines for the diagnosis and management of migraine in adults and children. *J Headache Pain* 15: 2.
28. Worthington I, Pringsheim T, Gawel MJ (2013) Canadian Headache Society Guideline: acute drug therapy for migraine headache. *Can J Neurol Sci* 40: S1-S80.
29. Ahmed MAK, Haddad M, Kouassi B, Ouhabi H, Serrie A (2016) Formalized consensus: clinical practice recommendations for the management of the migraine in african adult patients. *The Pan African Medical Journal* 24: 81.
30. Tfelt-Hansen P, Pascual J, Ramadan N (2012) Guidelines for controlled trials of drugs in migraine: third edition. A guide for investigators. *Cephalalgia* 32: 6-38.
31. Tebeka BR (2012) Management of menstrual migraine. *The Letter of the Neurologist* 16: 5.
32. Calhoun AH (2012) Menstrual migraine: update on pathophysiology and approach to therapy and management. *Curr Treat Options Neurol* 14: 1-14.
33. De Lignières A, Vincens M, Mauvais-Jarvis P, et al. (1986) Prevention of menstrual migraine by percutaneous oestradiol. *Br Med J* 293: 1540.
34. Poulter NR, Chang CL, Farley TMM, Meirik O, Marmot MG (1996) WHO collaborative study of cardiovascular disease and steroid hormone contraception. Ischaemic stroke and combined oral contraceptives: results of an international, multicentre, case-control study. *Lancet* 348: 498-505.
35. Walling A (2017) Headache. In: *Family Medicine*. Springer International Publishing Switzerland 807-822.
36. Wells RE, Turner DP, Lee M, Bishop L, Strauss L (2016) Managing migraine during pregnancy and lactation. *Curr Neurol Neurosci Rep* 16: 40.
37. Turner DP, Smitherman TA, Eisenach JC, Penzien DB, Houle TT (2012) Predictors of headache before, during, and after pregnancy: a cohort study. *Headache* 52: 348-362.
38. Messali A, Sanderson JC, Blumenfeld AM (2016) Direct and indirect costs of chronic and episodic migraine in the United States: a web-based survey. *Headache* 56: 306-322.
39. Linde M, Gustavsson A, Stovner LJ (2012) The cost of headache disorders in Europe: the EuroLight project. *Eur J Neurol* 19: 703-711.
40. Woldeamanuel YW (2014) Prevalence of migraine headache and its weight on neurological burden in Africa: A 43-year systematic review and meta-analysis of community-based studies. *J Neurol Sci* 342: 1-15.
41. IHME. GBD Compare. Seattle, WA: Institute for Health Metrics and Evaluation, University of Washington, 2015.
42. Radtke A, Neuhauser H (2009) Prevalence and burden of headache and migraine in Germany. *Headache* 49: 79-89.
43. Steiner TJ, Scher AI, Stewart WF, Kolodner K, Liberman J, et al. (2003) The prevalence and disability burden of adult migraine in England and their relationships to age, gender and ethnicity. *Cephalalgia* 23: 519-527.
44. Buse DC, Loder EW, Gorman J (2013) Sex differences in the prevalence, symptoms, and associated features of migraine, probable migraine and other severe headache: results of the American Migraine Prevalence and Prevention (AMPP) Study. *Headache* 53: 1278-1299.
45. Henry P, Auray JB, Gaudin AF (2002) Prevalence and clinical characteristics of migraine in France. *Neurology* 59: 232-237.
46. MacGregor EA, Brandes J, Eikermann A, Giammarco R (2004) Impact of migraine on patients and their families: the Migraine And Zolmitriptan Evaluation (MAZE) survey-Phase III. *Curr Med Res Opin* 20: 1143-1150.
47. Lipton RB, Stewart WF, Diamond S, Diamond ML, Reed M (2001) Prevalence and burden of migraine in the United States: data from the American Migraine Study II. *Headache* 41: 646-657.
48. Marcus DA, Ready DM (2017) Accepting Migraines. In: *Discussing migraine with your patients*. Springer New York p: 49-59.