**THE ROLE OF THE HEALTHCARE PROFESSIONAL IN MANAGING MENSTRUALLY RELATED MIGRAINE**

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**ABSTRACT**

The involvement of many physicians and healthcare professionals in a woman’s medical care encourages a multidisciplinary approach to several conditions that affect women predominantly or exclusively, including migraine and menstrual related migraine (MRM) headache. Such an approach widens the window of opportunity for healthcare providers to identify women with MRM and ensure that they receive appropriate treatment. This article reviews the personal impact of MRM and reviews differences in headache impact between MRM and no migraine and between MRM and migraine attacks that are not related to menstruation. The article also describes methods of predicting when an MRM attack is likely to occur, and addresses the need to be aware of premenstrual and premonitory migraine symptoms, the value of a multidisciplinary approach to identifying and managing patients with MRM, and the role of various healthcare professionals within such an approach.


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**W**omen typically receive medical care from physicians and other healthcare professionals who practice in a variety of specialties. They receive care from primary care providers for any number of ailments, and they receive care from obstetricians/gynecologists for pregnancy, childbirth, and other conditions that affect women exclusively. Because women have a higher incidence of conditions such as migraine, rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis, and depression, they also are likely to receive care from neurologists, headache specialists, psychiatrists, rheumatologists, and others.

Professionals practicing in all of these areas—physicians, nurses, nurse practitioners, physician assistants, psychologists, etc—are in an excellent position to identify women with previously undiagnosed menstually related migraine (MRM) and to treat or refer them for treatment as necessary.

Identification of MRM depends on recognizing its signs, symptoms, and comorbidities, connecting migraine to menstruation, and listening to the patient as she describes (either spontaneously or in response to careful questioning) her symptoms and the impact of migraine and menstrual disorders on her personal life.

**PERSONAL IMPACT OF MENSTRUALLY RELATED MIGRAINE**

Pure menstrual migraine (MM) is generally defined as migraine headache that occurs only during the perimenstrual period (ie, between days -2 and +3 of the menstrual period). MM is rare, accounting for only 3.4% of migraine headaches in one study, but MRM (migraine occurring with the menses as well as at other times during the month) is more common.
Both migraine and menstrual disorders can have a profound impact on daily life, work, social activities, and overall well-being. Moreover, both are associated with comorbid conditions that also can have a profound impact on the above. Yet, there are few data specific to personal impact of MRM.

A small population-based study of women with migraine found that the risk for migraine without aura, a characteristic of MRM, and tension-type headache was highest on days 0 and 1 of the menstrual cycle, with 0 being the first day of menses. The study also found that the risk for migraine without aura was higher during the 2 days prior to onset of menses and that pain intensity was slightly greater for migraine headaches occurring during the first 2 days of menses.

A much larger Internet-based study involving nearly 1200 women between ages 13 and 55 in The Netherlands found that 3% had MRM and <1% had pure MM. However, more than half of those with MRM reported the menstrual period as the headache trigger, and that headaches occurring during this time felt more severe, lasted longer, and were more resistant to treatment than headaches occurring at other times of the month. They also reported more restriction in daily activities than did those whose headaches were not menstrually related.

A within-woman analysis of 155 women who attended a headache clinic found that headaches occurring during the natural menses were twice as likely to be severe, 2.6 times more likely to be associated with nausea, and 4.7 times more likely to be associated with vomiting compared with headaches occurring at other times of the month.

A small study based on 2-month diary entries by 64 women who experience migraine without aura and MRM and who attended a headache clinic found that half the women’s attacks were MRMs, that perimenstrual attacks lasted longer and were less responsive to medication than were non-menstrually related migraine (NMRM) attacks, and that women with MRM experienced more work-related disability than those with NMRM.

Another study compared the characteristics of headaches occurring during withdrawal bleeding in women taking oral contraceptives, and therefore not ovulating, with the characteristics of headaches occurring in women with MRM who were having regular natural menstrual cycles. The investigators found that headache duration was 3 times longer, headache severity 3 times greater, analgesic use 3 times greater, and vomiting slightly more frequent in the women using oral contraceptives.

**IMPACT OF MENSTRUAL DISORDERS**

A series of ongoing and recently completed studies look at the impact of chronic vs episodic migraine, the impact of disability and headache severity, and the impact of menstrual disorders on women with migraine, including MRM. Data show that headache impact measured by the Headache Impact Test (HIT) 6, somatic symptoms measured by the Patient Health Questionnaire (PHQ) 15, and depression measured by the PHQ 9 were significantly more severe in women with chronic vs episodic migraine headache. In another population, there were no statistically significant differences in severe disability, as measured by the Migraine Disability Assessment (MIDAS), or in headache impact, as measured by HIT 6, between women with MRM and women with NMRM (G. E. Tietjen, MD, unpublished observations).

Other studies in the series examined the frequency of premenstrual dysphoric disorder (PMDD) and various symptoms of PMDD (Table 1) in women with MRM and women with NMRM. Except for marked depression and lack of energy/fatigue, which were more severe in women with MRM, there were no statistically significant differences between the 2 groups (G. E. Tietjen, MD, unpublished observations).

| Table 1. Symptoms of Premenstrual Dysphoric Disorder and Premenstrual Syndrome for Women With Menstrually Related Migraine or Non-Menstrually Related Migraine |
|-------------------------------------------------|-----------------|
| Physical Symptoms                               | Mood Changes    |
| Breast tenderness                               | Depression*     |
| Pelvic pain                                     | Anxiety         |
| Constipation                                    | Sadness         |
| Easy fatigability*                              | Irritability    |
| Change in appetite                              | Loss of interest|
| Sleep difficulties                              | Feeling overwhelmed |
| Diffficulty concentrating                      | Difficulty concentrating |

*Fatigue/lack of energy and depression were more pronounced for women with menstrually related migraine than for those with non-menstrually related migraine.
The frequency of menorrhagia, endometriosis, and other bleeding disorders in women with migraine and controls also was examined.

One study of menorrhagia, defined as more than 3 consecutive heavy menstrual periods, in 50 women with migraine and 52 age-matched controls without migraine found that self-reported menorrhagia was significantly more common in women with migraine. This was supported by the fact that migraineurs used more sanitary products and had more menstrually related soiling and menstrual interference (as scored by the components listed in Table 2) from their menses.8

When these same subjects were assessed for bleeding other than menorrhagia, those with either type of migraine had significantly more bruising, gingival bleeding, rectal bleeding, and minor trauma such as nicks and cuts than did those with no migraine.8 There were no significant differences between the migraine vs no migraine groups for major bleeding, surgical bleeding, and bleeding into joints.

A subset analysis of these subjects found that the frequency of menorrhagia and endometriosis was higher in women with MRM than in those with other types of migraine (G. E. Tietjen, MD, unpublished observations). Menstrual interference scores in the same subjects also were significantly higher for all components (Table 2) in those with MRM and other types of migraines than in those with no migraine.

The impact of endometriosis on women with migraine is considerable. As noted in a recent investigation, women with migraine and endometriosis were significantly more likely to have chronic headache, higher HIT 6 scores, anxiety, chronic fatigue syndrome, and interstitial cystitis than were women with migraine but no endometriosis.9

The overall conclusions from these small studies are that women with migraine experience more menorrhagia, more endometriosis, and more menstrual interference than do women with no migraine. When comparing women who have MRM with women who have NMRM, however, these studies found no significant differences in MIDAS, HIT 6, or menstrual interference scores or in frequency of PMDD.

That there are not more—or much larger—studies in the literature on the personal impact of MRM underscores the need for further research in this area.

**Predicting Menstrual Migraine and Menstrually Related Migraine**

There are several ways to predict the occurrence of MM and MRM. The most important is the menstrual diary. Keeping a careful diary and recording when symptoms and menstruation occur establishes the relationship between migraine and menstruation, reveals the pattern of occurrence over several cycles, confirms the diagnosis of MM and MRM, and predicts when the next migraine attack is likely to occur.

Other methods are based on determining when ovulation occurs and then adding 14 days to predict the date of the next migraine attack. These methods include measuring basal body temperature, which typically rises during ovulation; examining cervical mucus, which typically thins out and becomes more strandlike (spinnbarkeit) during ovulation; and monitoring for mittelschmerz, the pain and/or spotting that signify ovulation in some women.

MacGregor et al recently described the accuracy of a home-use fertility monitor with a hand-held computer that predicts menstruation by identifying ovulation.10 The prediction of ovulation and menstruation was used to time perimenstrual prophylaxis of migraine more precisely.

Still other methods include increasing awareness of premonitory symptoms of migraine, such as yawning, nausea, increased fatigue, and changes in appetite, as well as the symptoms of premenstrual syndrome and PMDD (Table 1).

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**Table 2. Components of the Menstrual Interference Score**

- General activity
- Going to work/school
- Normal family activities
- Sleep
- Ability to enjoy life
- Mood
- Overall quality of life
MULTIDISCIPLINARY APPROACH TO MANAGING AND TREATING MENSTRUALLY RELATED MIGRAINE

As previously noted, women typically receive medical care from many specialists and other healthcare professionals. All of these providers are in an excellent position to identify women with MM and MRM and to either initiate treatment or refer to others for appropriate pharmacologic treatment and behavior therapy.

For example, gynecologists who diagnose and treat endometriosis, menorrhagia, and dysmenorrhea and prescribe oral contraceptives and hormone therapy should ask patients about migraine and other headaches and whether they occur with menses. Primary care clinicians, who identify and treat a broad range of ailments, should ask women about headaches and menstrual problems, as well as should psychiatrists and psychologists, who often treat women with PMDD, anxiety, and depression and can provide biofeedback training and counseling.

Nurses and nurse practitioners can advise women with MRM about keeping an accurate headache diary, modifying diet, and the role of physical exercise in preventing migraine attacks and in reducing pain severity. Nutritionists and dietitians also can provide helpful advice about diet and food cravings, and physical therapists can advise about exercise and the use of ice/heat and massage.

A multidisciplinary approach widens the window of opportunity for many physicians and healthcare professionals to identify women with MRM and ensure that they are appropriately treated.

CONCLUSION

There is a paucity of data in the literature on the personal impact of MRM. Published reports indicate that MRM attacks last longer and are more resistant to treatment than migraine headaches occurring at other times of the month. MRM also is associated with greater restriction in daily activities and is more likely to be associated with nausea and vomiting than is NMRM.

Several unpublished reports note that women with MRM experience more menorrhagia, more endometriosis, and more menstrual interference than do women with no migraine, but there are no significant differences between women with MRM and women with NMRM with respect to MIDAS, HIT 6, or menstrual interference scores or frequency of PMDD.

Menstrual migraine can be predicted via several methods, including keeping a menstrual diary, measuring basal body temperature, examining cervical mucus, monitoring for mittelschmerz, and being aware of premonitory symptoms of migraine and symptoms of premenstrual syndrome and PMDD.

The fact that women typically receive medical care from many physicians and healthcare professionals encourages a multidisciplinary approach to MRM. Such an approach widens the window of opportunity for identification and treatment of MRM and underscores a need for multiple disciplines for the most effective management.

REFERENCES