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Understanding Premenstrual Syndrome from a Chinese Medicine Perspective

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ABSTRACT

Premenstrual syndrome (PMS) is a common disorder of some women during their reproductive years, characterized by a range of cyclical physical and/or mood symptoms experienced during the last few days of each menstrual cycle. Several treatment approaches have been applied, but have shown limited success, as the exact cause and pathophysiology of PMS is still not fully identified. In this paper, the etiology and pathogenesis of PMS is compared from both a Traditional Chinese Medicine (TCM) perspective and the Western biomedicine paradigm. TCM has used herbal medicines to treat the symptoms of the premenstrual and menstrual phases for centuries. To date, very few studies on the application of TCM to PMS have applied rigorous research methods. We examine the case of PMS from each paradigm: The biomedical view and that of TCM. Similarities and differences are identified and explored, and possible treatment approaches are considered and discussed in the light of these two models.

INTRODUCTION

Premenstrual syndrome (PMS) refers to a collection of cyclical physical and/or psychologic symptoms that appear during the late luteal phase of the menstrual cycle, persist until menses begin, and typically disappear during the early follicular days of the subsequent menstrual cycle (Moline and Zendell, 2000). It has a high prevalence. Depending on the methods of assessment and the samples of women selected, studies indicate that 25 to 96% of women of reproductive age have reported a wide range of premenstrual changes of varying degrees of severity, although only about 5 to 10% experience severe symptoms that affect their ability to function at home, in the workplace, or in relationships with others (Henderson, 2000).

From the perspective of biomedicine, the exact cause and pathophysiology of PMS is not completely understood (Kessel, 2000). Many pharmacologic agents that are typically prescribed to reduce the symptoms have adverse effects that limit their use in particular women (Endicott et al., 1996; Steiner, 2000).

From the perspective of Traditional Chinese Medicine (TCM), the signs and symptoms of PMS are explained as Liver *qi* stagnation, the proposed root cause of pathologic changes that affect other systems/organs of the body (He and Wang, 1995).

DIFFERENCES BETWEEN BIOMEDICINE AND TCM PERSPECTIVES ON PMS

Definition

According to the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition* (DSM-IV) (American Psychiatric Association, 1994) classification, the symptoms of PMS must occur in the late luteal phase, around days 26–28 in a usual cycle, must resolve within one or two days after the onset of menstrual bleeding, and disappear completely by the mid-follicular phase. The symptoms must be recurrent in most menstrual cycles during the current year and severe enough to frequently disrupt the woman's daily life.

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While biomedicine defines PMS as a collection of cyclical physical and mental symptoms in women, TCM does not consider it a distinct disorder. Rather, the TCM approach provides a focus on individual symptoms that appear around the menstrual phase. Descriptions of specific symptoms abound in the Chinese medical literature, such as edema during menstruation, and premenstrual breast distension (SiTu and Yang, 2000). In recent years, following the Western biomedical practice of disease categorization, modern TCM gynecology has begun to group all these symptoms under one category, called perimenstrual disorder. The diagnostics and treatments continue to follow the traditional approaches. Typical descriptions of perimenstrual disorder, such as those found in *The Clinical Gynaecology of Chinese Medicine* (Xia, 1994), refer to a series of menstrually related disorders that are cyclical and recurrent, and in which a variety of symptoms appear a few days before menstruation, that may continue during or immediately after menstruation, and disappear or lower to a negligible level in the early follicular phase. Thus, the biomedical definition and TCM descriptions are clearly referring to the same phenomena.

Background

In Western society, an early attempt to describe women's premenstrual problems occurred in 1931 when Frank coined the term premenstrual tension to describe the collection of predominantly somatic complaints brought to him by female patients (Endicott, 2000). In 1964, Dalton included both somatic and psychologic symptoms and renamed the condition PMS.

In classical Chinese medical records, the earliest discussion of premenstrual and menstrual symptoms dates back to the Ming dynasty (1368–1644 AD); in *The Appendix of Dan-Xi's Experiential Methods*, Fang advised that to diagnose cases of feverish sensation in women's diseases, one should ascertain whether it occurred during menstruation or also at other times. In *Ye Tianshi's Gynaecological Records* (Qing dynasty, 1644–1911), up to 22 perimenstrual symptoms were recorded, such as edema, feverish sensation, pain in the hypochondrium, diarrhea, body aches, abdominal cramps, and reduced appetite, with one general category given to all emotional changes. These descriptions mirror the Western biomedical phenomena very closely.

Symptomatology

Studies have found that premenstrual symptoms and levels of discomfort vary from woman to woman, but PMS has been reported to affect women from all cultures and socioeconomic and ethnic backgrounds (Henderson, 2000). In an Australian survey of 98 women seeking treatment of PMS, a total of 32 different psychologic or physical symptoms were reported at the initial interview (Gotts et al., 1995). The most frequently reported symptoms were irritability and depression, and these comprised at least half of the total symptoms experienced. A similar study of 454 Chinese women of reproductive age in Beijing reported that the most frequent symptoms were irritability, depression, anxiety, diarrhea, lack of concentration, and hypersomnia (Zhao et al., 1998). These findings indicate a considerable similarity of reported symptoms and the dominance of negative mood states in both Western and Chinese women reporting symptoms of PMS.

Etiology

In the West, the exact etiology of PMS remains unclear after more than 40 years of systematic research. Findings to date consistently suggest that PMS is multifactorial, with the involvement of hormones, neurotransmitters, neurosteroids, nutrition, and psychosocial factors (Steiner, 2000). Even so, after considerable study and research, no exact hormonal or neurochemical dysfunctions have been identified that can explain the disturbances (Dickerson et al., 2003).

TCM approaches acknowledge that menstruation is a natural physiologic phenomenon produced as a result of the action of *Tiankui* Blood, *qi* (life force), meridians (especially the *Chong* and *Ren* meridians), and the internal organs (particularly the Liver, Kidney, and Spleen) that affect the uterus (Chen, 1998). The occurrence of symptoms directly before menstruation, which diminish gradually as menses begin, or after menstruation has ceased, is explained as being related to the changes of the excess or deficiency of the Blood and *qi*, and the fullness or emptiness of the *Chong* and *Ren* meridians during this phase (Cai, 1997). The states of deficiency in *qi*, Blood, *yang*, and *yin*, and/or the excess conditions (i.e., Fire, Stasis, Dampness) of organs of the individual constitution may give rise to different symptoms and severity (Zhang, 1990).

Prior to menstruation, Blood and *qi* travel down to the uterus via the *Chong* and *Ren* meridians to prepare the organ for menstruation. When *qi* is abundant, the Blood will flow more rapidly, often resulting in an accumulation that may cause a blockage of the meridians. As the *Chong* and *Ren* meridians are governed by the Liver meridian, the flow of Liver *qi* is perceived to become disrupted. The accumulation of Blood in the lower part of the body (uterus) may also result in an insufficiency of *yin* Blood in other organs of the body. Consequently, the function of internal organs during this time is understood to be adversely affected, leading to the systemic signs and symptoms that are accepted as directly associated with PMS. Once the normal flow of Blood and *qi* is restored as menstruation commences, the symptoms disappear (Chen, 1998).

All women are regarded as being prone to a *yin* Blood deficiency because of regular blood loss during menstruation, as well as in giving birth (Chen, 1998). When the internal organs are lacking in nourishment by Blood, their function is impaired. The Liver system is the reservoir and regulator of Blood and *qi* for the entire body. Failure to prop-

erly regulate and distribute Blood in the appropriate quantities throughout the body results in various disharmonies. The Liver system also ensures the smooth flow of *qi* throughout the body. Accordingly, if the function of the Liver system is impaired, the harmonious movement of *qi* will be obstructed (Han, 1998). As *qi* is the basis for all physical, emotional, and mental processes, when any obstruction to its movement occurs, this will give rise to emotional and physical symptoms (Maciocia, 1989). The Liver meridian passes through the head, face, breasts, hypochondrium, and lower abdomen. According to TCM theory, the common symptoms of PMS (such as headache, dizziness, breast tenderness or swelling, irritability, agitation, frustration, depression, and anger), are caused by an impaired function of the Liver system (He and Wang, 1995), and is the primary factor triggering PMS (Yu, 1997).

The Five Elements theory of TCM, in *The Yellow Emperor's Classic of Internal Medicine* (circa 100 BC), describes the human body as an inseparable, integrated whole, with the functions of all of the internal organs interconnected and interdependent (Fig. 1). Thus, one organ may affect other organs, depending on the state of health in any given organ at a particular time.

For instance, prolonged stagnation of Liver *qi* may transform into Heat/Fire, causing Heat/Fire in the related Stomach or Heart systems, giving rise to symptoms such as increased appetite, oral ulcer, irritability, frustration, and insomnia. When the stagnant Liver *qi* disrupts the Spleen, which governs the transformation and transportation of water inside the body, those with a weak Spleen system may experience increased water retention. As water is retained in the skin and muscles, it will manifest as edema. If water moves downward untransformed, it may give rise to diarrhea. If the Blood fails to nourish the Heart system, manifestations such as forgetfulness, crying, or lethargy may occur, since the spirit is controlled by the Heart system (Cai and Zhou, 1997).

These theoretical views from TCM seek to explain the appearance of PMS symptoms in the premenstrual phase, as well as the idiosyncratic nature of PMS complaints that have also been described in Western women (Gotts et al., 1995).

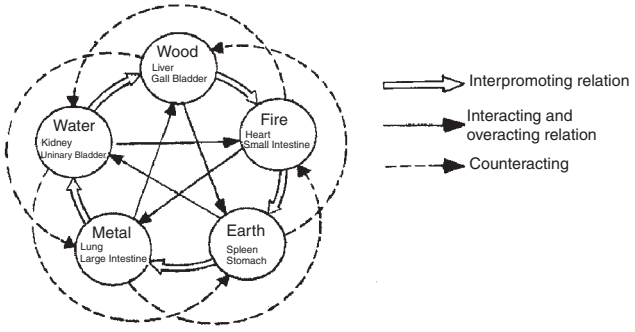

FIG 1. Interpromoting, interacting, overacting, and counteracting relationships among the five elements Wood, Fire, Earth, Metal, and Water.

Diagnosis

Because of the range of symptoms associated with PMS and the absence of a specific diagnostic laboratory test to confirm a diagnosis (Frye and Silverman, 2000), assessment of PMS must depend on what is actually reported by the women themselves (Freeman, 2003). According to the American College of Obstetricians and Gynecologists, a diagnosis of PMS should include: symptoms consistent with the classification of defined PMS, restriction of these symptoms to the late luteal phase, impairment (mild, moderate, or severe) of some facets of the woman's usual life, and the exclusion of other disorders. The information should be based on prospective diaries kept by women charting their symptoms, preferably every day for approximately 8–10 consecutive days for 2–3 consecutive months (Henderson, 2000). In 1983, the National Institute of Mental Health suggested that a diagnosis of PMS was dependent on symptom severity increasing by at least 30% in the 6 days preceding menses as compared to up to 5 days after menstruation. These symptoms had to be present during at least 2 consecutive cycles (Dickerson et al., 2003).

The TCM diagnostic process is known as pattern identification (*Bian Zheng*), and involves a synthesis of symptoms and signs collected through 4 methods of diagnosis—inspection, auscultation, interrogation, and palpation—to identify a meaningful pattern or patterns of disharmony to guide treatment (Maciocia, 1989). Thus the diagnosis of perimenstrual disorders is made according to the cyclical timing of symptoms that are associated with menstruation, using information collected through the 4 diagnostic methods during consultation, and linking these symptoms into a pattern or patterns of disharmony.

Subtypes: Researchers have attempted to identify subtypes of premenstrual symptoms by grouping them into clusters, or according to severity. In the West, these subtypes include premenstrual syndrome (Dalton, 1964; Dalton, 1984); menstrual distress syndrome (MDS) (Dalton, 1980); and late luteal phase dysphoric disorder (LLPDD)/premenstrual dysphoric disorder (PMDD), which appears in the appendix of the DSM-IIIR and DSM-IV (American Psychiatric Association, 1987; American Psychiatric Association, 1994) and is considered to be the most severe form of PMS (Freeman, 2003).

In TCM, Gao and Chen (1994) categorized PMS according to 22 patterns of disharmony, from journal papers over a period of 10 years (Table 1). The most common patterns encountered were Liver *qi* stagnation and Liver and Kidney *yin* deficiency, causing heat in the internal organs.

Treatment

Pharmacologic agents such as hormones, selective serotonin reuptake inhibitors (SSRIs), tranquilizers, diuretics, and nonsteroidal anti-inflammatory drugs (NSAIDs) have all been used to treat PMS (Frye and Silverman, 2000). Unfortunately, many of these drugs have several potentially ad-

Table 1. Premenstrual Syndrome: 22 Patterns of Disharmony

1	Liver *qi* stagnation
2	Liver *qi* stagnation transforms into Fire
3	Disharmony between Liver and Spleen
4	Liver and Kidney *yin* deficiency causing Liver *yang* flare up
5	Blood deficiency causing hyperactivity of Fire
6	*Qi* and Blood stagnation causing blockage in the channels and collaterals
7	Phlegm and *qi* binding together/Blood stasis causing obstruction
8	Spleen and Kidney *yang* deficiency
9	Exuberance of Heart Fire causing Heart and Kidney failure to communicate
10	*Qi* and Blood deficiency causing disharmony between *ying qi* and *Wei qi*
11	Lung and Spleen *qi* deficiency with Liver Fire flaring up
12	Dampness retaining in the Lung and Spleen
13	Sluggishness of Lung *qi*
14	*Yin* deficiency causing hyperactivity of Fire that burns the Lung collaterals
15	Kidney deficiency causing stagnation of Liver
16	Heart and Spleen deficiency
17	Liver and Kidney deficiency giving rise to coldness that blocks the Liver channels
18	Blood stasis and Heat stagnating in the *Chong* and *Ren* channels
19	Blood stasis stagnating Interiior causing Liver Fire to flare up
20	Stomach and Kidney *yin* deficiency causing the up rush of *qi*
21	Yang deficiency and *qi* insufficiency
22	Heat in the internal organs

verse effects (Young, 2001) and some have been shown to provide symptomatic relief no better than placebo, or for only short periods of time (Freeman and Rickels, 1999). SSRIs have been the only pharmacologic agents clearly shown to be more effective than placebo in treating this condition and fluoxetine is the only drug recently approved for PMDD in several countries (Steiner, 2000). However, the SSRIs have been reported to produce side effects such as insomnia, gastrointestinal disturbances, fatigue, nervousness, difficulty in concentrating, dizziness, and sexual dysfunction (Steiner, 2000). These symptoms are within the same class of complaints for which women seek treatment in the first place, so a key question concerns whether the effects of treatment are better or worse than the condition itself.

In recent years, several well-designed trials have demonstrated the efficacy of cognitive behavior therapy (CBT) in reducing the negative effects of both psychologic and physical symptoms of PMS. Relaxation therapy has also been reported to be successful by some (Goodale et al., 1990). Morse and colleagues (1991) compared CBT with a progestogen (the preferred treatment at that time) and relaxation. CBT was found to be superior to the other therapies through the 10-week treatment phase and on follow-up after 3 months.

In TCM, since Liver *qi* stagnation and *yin* Blood deficiency are proposed as the most common root causes of PMS, the fundamental principles of treatment for the disorder involve measures to regulate Liver *qi* so as to resolve stagnation and to tonify Blood. Traditionally, Chinese herbal medicine is the most common treatment therapy for perimenstrual symptoms. The most common medicines for the relief of PMS are: herbs (*Chaihu* [*Radix bupleuri*], *Xiangfu* [*Rhizoma cyperi*]) for releasing the stagnation in the Liver *qi* and for tonifying Blood (*Danggui* [*Radix angelicae sinensis*], *Baishao* [*Radix paeoniae alba*]), or herbal formulas such as *Xiao Yao San* or *Chai Hu Shu Gan Tang*. Acupuncture can be applied to move the Liver *qi* on certain acupoints, including Liv-3 (*Taichong*), and GB-34 (*Yanglingquan*), and to tonify Blood (e.g., Sp-6 [*Sanyingjiao*]) (You, 1997). Chinese diet therapy can also be utilized. *Qigong*, Chinese deep breathing exercises such as *Tai Ji Quan*, can also be undertaken to maintain the treatment effect as a long-term therapeutic strategy, and is similar in intent and application to Benson's relaxation technique and the controlled breathing and muscle movements of Pilates.

Gao and Chen (1994) summarized the results of 30 studies of PMS using Chinese herbal medicine in China. Of a total of 861 patients with PMS, in 651 patients (75.6%) the result was full recovery, 177 patients (20.6%) showed some effect, and 33 (3.8%) patients had no effect.

A literature search of the Chinese Bio-Medicine Disc (Institute of Chinese Medical Information, 2000) has revealed that a total of 92 articles on perimenstrual disorder/PMS were published in Chinese medical journals from 1979 to 1999. Of these, 32 were clinical study reports on the treatment of PMS using Chinese herbs, and 1 study of acupuncture. These 32 clinical studies of herbal medicine cover 2531 patients: 29 studies used Chinese raw herbs and 3 used herbal granules. One used herbs in a compress applied externally for abdominal cramps. Seven used a number of herbal formulas according to the defined patterns of disharmony (Table 2). Eight (8) studies applied a single herbal formula to treat a single perimenstrual symptom. The remaining 16 studies used one classic formula (e.g., *Xiao Yao San*) or one of their own herbal formulas to treat the disorder/symptom as a whole. Twenty-nine (29) studies reported an effective rate >90%, while 2 studies reported 85–86% effectiveness, and 1 study reported an effective rate of 80%.

As these results were either from case studies, or from studies that were not well-designed or using robust experimental designs, the claims must be viewed with caution.

Methodologic aspects

Western approaches in treatment studies for PMS include a wide range of methods including randomized controlled

Table 2. Patterns of Disharmony in Selected Studies of Premenstrual Syndrome

Study	*Patterns of disharmony*							
Ye, 1998	Liver *qi* stagnation	*Yin* deficiency with heat	Heart and Spleen deficiency		Liver and Kidney *yin* deficiency			
Liang, 1996	Liver *qi* stagnation	*Yin* deficiency with heat	Heart and Spleen deficiency	Spleen and Kidney *yang* deficiency		Blood deficiency	Blood stagnation	
Zhu, 1995	Liver *qi* stagnation		Heart and Spleen deficiency	Spleen and Kidney *yang* deficiency	Liver and Kidney *yin* deficiency		Blood stagnation	Cold and dampness stagnation
Zhao and Yang, 1994	Liver *qi* stagnation	*Yin* deficiency with heat		Spleen and Kidney *yang* deficiency				
Wang, 1988	Liver *qi* stagnation				Liver and Kidney *yin* deficiency	Blood deficiency	*Qi* and Blood stagnation	
Xu, 1982	Liver *qi* stagnation	*Yin* deficiency with heat		Spleen and Kidney *yang* deficiency			Blood and phlegm stagnation	
Chen et al., 1982	Liver *qi* stagnation	*Yin* deficiency with heat		Spleen and Kidney *yang* deficiency	Liver and Kidney *yin* deficiency			

trials, single-blinded comparative group studies, and, less frequently, uncontrolled individual case studies.

In the 32 clinical studies using Chinese herbal medicine mentioned above, only 1 was a single-blinded study; the other 31 were open trials. Five (5) studies employed control groups that received a range of biomedicine including bromocriptine mesylate, estradiol, progesterone plus oryzanol, or natural products of soy powder and bran skin. Three (3) studies employed random assignment to groups. Twenty-six (26) studies graded their results into 4 levels, and 6 studies graded into 3 levels. Only 2 used individually designed symptom assessment charts.

The Gao and Chen study (1994) revealed that although the results of the 30 studies they summarized were outstanding, most lacked systematic observation or standardized diagnoses. Some of the studies were only single case reports, and very few studies had control groups. All these discrepancies clearly affect the evaluation value of the claimed rates of treatment effectiveness.

SUMMARY AND FUTURE DIRECTION

PMS has many symptoms and is idiosyncratic in nature. While biomedicine typically utilized symptomatic relief approaches until recently, when both psychologic assessment and medical management are frequently considered together, the underlying hypothesized causation is still addressed through such treatments. TCM typically employs a holistic treatment plan which is determined to cover both psychologic and physical symptoms, and also strives to address the hypothesized root cause of the syndrome. It is clear that PMS is a condition experienced by thousands of women worldwide for which TCM may be a most suitable addition as an effective alternative treatment to Western biomedicine. However, confidence in this treatment is largely based on practice that accords respect to traditional practices, yet which has not been scientifically evaluated. Although some research has been carried out, there have been no rigorous clinical trials on the use of Chinese herbs to treat PMS to satisfy Western demands for hard, thoroughly researched, evidence.

For the most robust consideration, a double-blinded controlled clinical trial is one highly desirable approach to scientifically evaluating the effectiveness of Chinese herbal medicine. The outcomes should be measured by the occurrence and severity of both the psychologic and physical symptoms. Data collection should be based on those validated and widely used questionnaires that have a high internal consistency. Only through rigorous evaluation methods carried out by formally trained practitioners can the efficacy of TCM be demonstrated and allowed its place along Western biomedical treatments.

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