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Reexploring the Current Management Strategy of Premenstrual syndrome (PMS)

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Abstract. Premenstrual syndrome (PMS) refers to a group of symptoms that occur repeatedly before menstruation and affect women's daily life and work, involving both physical and mental (emotional, behavioral). It is one of the diseases with high incidence in women of childbearing age, and with the increase of social pressure and fast-paced lifestyle, the incidence of PMS has gradually increased in recent years and has been paid more and more attention by researchers. Only when the detailed pathogenesis is revealed, can the clinical treatment be targeted, so as to provide more appropriate treatment and improve the physical and mental quality of life of PMS patients. With the deepening of modern medical research, ovarian steroid hormones, central neurotransmitters and lifestyle all affect the occurrence and development of PMS. In clinical treatment, first from the daily life, adjust the way of life, pay attention to keep a good mood; Early diagnosis and treatment, to prevent disease prolongation and deterioration, combined with hormone therapy or other complementary and alternative therapies, according to the patient's own situation to choose the appropriate intervention methods to achieve the best results.

Keywords: Premenstrual syndrome, etiology, management.

1. Introduction

Premenstrual syndrome, PMS, a common cyclic disorder happens on females during the reproduction age. PMS usually occur in the second half of the menstrual cycle (from the start of the first period to the start of second period) and ending once the next period start, this period also known as the luteal phase. PMS sufferers will have emotional and physical symptoms during the luteal phase, such as anxiety, depression, mood swings, poor concentration and more. These symptoms bring negative affect to one's life. Researchers find that 50%-80% of female have PMS in reproduction ages and 30-40% of them required treatment, whether the result high or low is according to the cultural background. The researcher stated that the pooled prevalence of PMS was 43% respectively. The estimated prevalence of PMS in adolescence was higher and account to be 49.6% [1]. Although so many women suffer from PMS, researcher nowadays still have weak evidence to prove the causes of PMS, speculating that it might relate to estrogen, progesterone, serotonin, prostaglandins [2]. This report aims to present the management of PMS.

2. Etiology

According to researchers nowadays, it's still unclear about the causes of PMS, guessing that PMS might cause by the abnormal of ovarian hormone levels, serotonin levels, and gamma-Aminobutyric acid

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(GABA) levels. The first theory suggests that PMS was associated with ovarian levels. According to the absent of PMS during before puberty, after menopause, during treatment with gonadotropin releasing hormone (GnRH)a analogues, researcher found that the high level of progesterone, phenomenon happened on all reproduction ages women. But there is no different sign about the progesterone level, result that after compared the symptomatic and the asymptomatic women. In this condition, researchers states that the cause of PMS might be one's sensitivity of progesterone [1,3-5].

One of the theories suggested that the drop of estrogen and progesterone during premenstrual makes the depression or mood swing. The progesterone dropped by the breakdown of the corpus luteum, failing to fertilize the egg. The low level of progesterone level makes the unstable of once emotion by increasing the monoamine oxidase. In the other hand, estrogen supposed to block the cortisol and adrenaline, which suppress the stress hormone and giving energy. The researchers state that the drop of progesterone and estrogen level lead to more stress hormone effect and less protect of once energy.

The low concentration allopregnanolone might also have an effect. While GABA produces a calming effect by slowing down the brain, blocking specific signals in the central nervous system, GABA receptors didn't work well during the luteal phase that the GABA receptors expose in a high concentration of allopregnanolone in the luteal phase which makes the receptors less sensitively. This is because the low concentration of allopregnanolone which is the metabolism of progesterone, a factor affects the emotions. So, researchers found that the negative emotion might be related to the low concentration of allopregnanolone [6-8].

The other theory in etiology claimed that prostaglandins might be affect to the PMS. Prostaglandins is the occur when body has tissue damage or infection. Researchers suggest that the painful feeling cause by prostaglandins lead to PMS, result of uterine cramping, the prostaglandins cause painful feeling of lower stomach. Female's mood may be affected by the painful feeling.

The appearance of PMS is also caused by BMI(Body mass index), exercise and diet. Researchers found that maintain a healthy body mass nay help prevent PMS, questioning women from ages 27 to 44 that haven't got PMS at first, including 1057 women who developed PMS over the follow-up 10 years. The experience immediately shows that the strong relationship between BMI and the development of PMS, increasing 1 kg/m2 in BMI associated with a significant 3% increase in PMS risk. Symptoms such as swelling extremities, backache, and abdominal cramping are caused by PMS [9,10].

PMS has a genetic component, meaning that PMS is more likely to happens on once whose mother also got PMS [11].

3. Management

Management of PMS, the variety number, type and severity person to person, the characteristics are more suitable for individualized manage plan. The different stages of PMS, divided into two stages, cure symptoms that cause by lifestyles or diet and symptoms that cause adverse on daily life that need pharmacological treatment. There are four steps of management of PMS, training and consulting, non-pharmacological treatment, pharmacological treatments, surgical treatments. Non-pharmacological and pharmacological strategies and surgical methods are applied as the last option [3,7,12,13].

3.1. Creating awareness

PMS is a symptom that effect the quantity of life and close relationship, although women in most of the country suffer from PMS and required for treatment, most of women didn't ask for help and avoid to talking about it in daily life, causing rarely women know about this symptom and have no clue how to deal with it, living in helpless. In this condition, health workers provide organization in the health institution, training women who's during reproduction age and get in health condition because of PMS. Abundant knowledge of PMS, getting better know about the fundamental and cases, learning how to diagnose PMS [8,14].

Under the conditions of women are shame to talk about or ask help for period, people should eliminate period shame. Women could get help immediately when people are genuinely talk about period and women fully understand their body.

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3.2. Self-screening

Only if a woman who have awareness of PMS and believe that PMS could be manage will ask for treatment or help. To increase this phenomenon, women should keep a PMS diary, or a menstrual cycle diary, recording calendar for the symptoms of PMS and recognizing the mild, moderate, or severe on each day, process that help women determine the severity and type of symptoms. Women who doing this process could not only get help immediately but also able to make a better schedule for exam or important event, being in a good condition is important to decision making or people spending. So, keeping a PMS dairy could make sure women get help as early as they recognize the symptoms and decrease the risk of PMS brings to once life.

3.3. Lifestyle changing

Most of the women could get ride off PMS by only changed the lifestyle. Such as adding daily exercise, sleep well, quit smoking, always be in a good mood, changes like these could see as part of PMS management.

Keep at least 30 minutes exercise and a healthy body mass could keep women aways from PMS.

Stay an adequate and qualified sleep could help women keep away from PMS. Because of the negative impact cause by sleep disruption or poor-quality sleep, which is bad for women body's melatonin production.

Smoking is also an important fact that impact PMS. Nicotine, which is included in cigarettes increases susceptibility to environmental stressors, leading to the development of PMS or worsened the symptoms of PMS. Quitting smoking may help recover PMS.

Good communication can obstruct the development of PMS. Communicate with each other fully and honestly, action that reduce stress and anxiety.

Using acupuncture, turmeric, flaxseed oil, coenzyme Q10, magnesium, and B vitamins helped to reduce the symptoms of premenstrual syndrome. Symptoms of patients decrease obviously by combination of treatment and the therapy, a process takes 3 months. Researchers examine the patient every 4 weeks and make the conclusion that the symptoms are decreasing gradually [4].

4. Non-pharmacological treatment

4.1. Cognitive behavior therapy

Cognitive behavioral therapy (CBT), talking therapy, changing once's way of thinking and behaving to solve the problem. Therapy that uses mostly on anxiety and depression. Women who suffer from PMS could get help by this therapy, because the improvement of perimenstrual quality of life.

One of the experiments that randomized chosen 174 women with PMS, showing the decrease of symptoms after using the cognitive behavior therapy, comparing to the control group [7,8].

This therapy may improve the patient's cognition of the disease, mainly on the patient's unreasonable cognitive problems, by changing the patient's view and attitude to have, people or things to change the patient's depression, various anxiety disorders and other psychological problems, so as to reduce anxiety.

4.2. Complementary behavioral therapy

Complementary behavioral therapy is a type of therapy that helps patients with non-traditional therapy, therapy only enacted by mental health professionals who believe their clients would benefit from more non-traditional treatments. It focuses on challenging and changing cognitive distortions. For example, music therapy, tai chi, biofeedback, reiki. Women who treated by complementary behaviors therapy can reduce stress and anxiety, which calm the serotonin on the brain. It's cured the symptoms of PMS [15-18].

4.3. Nutritional diet therapy

Studies have shown that some nutrients also fluctuate periodically during a woman's menstrual cycle, which may help explain some of the symptoms of PMS, and there is evidence that supplementation with

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these nutrients may help alleviate PMS. For example, vitamin B6 is an important cofactor in the formation of the neurotransmitters dopamine and serotonin. There is a strong synergy between the various B vitamins. Therefore, supplementing a variety of B vitamins at the same time is better than supplementing vitamin B6 alone. In addition, vitamin B6 and magnesium can enhance each other, vitamin B6 can improve cell membrane transport capacity and magnesium utilization, and thus improve estrogen metabolism. Magnesium is also needed for the production of serotonin. If you supplement magnesium with B vitamins, you can better relieve the symptoms of premenstrual discomfort [19].

5. Pharmacological treatments

5.1. Non hormonal treatment

Selective serotonin reuptake inhibitors (SSRIs) and serotonin–noradrenaline reuptake inhibitors (SNRIs) are two types of antidepressant medications that helps cure the PMS symptoms. While women take these drugs at luteal phase, drugs effect by slowing the reuptake serotonin [6,7].

5.2. Hormonal treatment

Hormonal treatment is use of synthetic hormones or drugs to interpose the movement of body's natural hormones. Hormonal treatment is usually used to treats common menopausal symptoms, including hot flashes and vaginal discomfort. These drugs suppressed the production of hormones in naturally body, an affect that occur during menstrual stage.

Oral contraceptives containing drospirenone is one of the drugs for cure the PMS symptoms. After looking for the absence of symptoms and the influence of emotion, after taking oral contraceptives containing drospirenone, a experience that did on 858 women. The researchers got a result that women whose take the birth control pills, oral contraceptives containing dropirenone, get better in their daily life, having more communicate and connectiong with their friends [6,7].

In China's 2015 "China Expert Consensus on the Clinical Application of Compound Oral Contraceptives", it was mentioned that COC with anti-salt corticosteroids and anti-androgen effects in the treatment of PMS can significantly improve symptoms. A comparative study of the efficacy of drospirodone 3 mg+ ethinylestradiol 20 μg COC in the treatment of PMS showed that the use of hormone-containing tablets for 24 days + blank tablets for 4 days could better improve PMDD symptoms [20].

5.3. Symtomatic treatment

Symtomatic treatment could help women with PMS reduce the pain. This type of treatment was defined as a way that directly toward the relief of distressing symptoms. For example, women with PMS will use the therapy of antidepressant, a treatment could directly cure the symptoms but noy the causes or the condition. It's also known as, the reappearance of symptoms in the future, so this treatment is useful for short term therapy. Women need to face the causes and condition to fully cure PMS or alleviate the symptoms of PMS [9,12].

6. Surgical treatments

Oophorectomy if a type of surgical treatment that used at the last stage of PMS. Operation purpose to reduce the risk by removing one or both ovaries and can be done laparoscopically unless otherwise indicated. Oophorectomy could also be performed for ovaries pathology, risk reducing purpose, fertility preservation. The surgical would use Laparoscopic hysterctony +bilateral salpingo to performed [7].

7. Conclusion

There are many clinical manifestations of PMS. Since PMS has neither specific symptoms nor special laboratory diagnostic indicators, there is still no unified diagnostic standard in the world. The study of the pathogenesis of PMS has made great progress, but it is still difficult to reveal the changes of its internal mechanism from the internal and deeper level, and further research is needed. Treatment is

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mainly symptomatic treatment, taking sex hormones, anti-depressants and anxiety drugs and vitamins, etc. However, due to the lack of strict randomized controlled blind studies and unified diagnosis and efficacy evaluation standards, their effectiveness is not convincing and comparable. In the future, more multi-center, large-sample clinical studies are needed to objectively evaluate the efficacy of PMS. In addition, the patient should keep an open mind and cooperate with the doctor to take psychological therapy from the psychological factors, so as to facilitate the doctor to combine psychology and pathology, so as to receive better results

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