

PMS; Is it Premenstrual Syndrome or Psychotic Mood Shift? An Insight into Neuroendocrine Mechanisms during the Luteal Phase of Menstrual Cycle

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Premenstrual syndrome (PMS)

A cyclical series of relapsing, physical, emotional and behavioral syndromes that befalls during the luteal phase of menstrual cycle and is resolved soon after the commencement of menses [1]. The woman complains of repeated physical and psychological symptoms all through the luteal phase [2]. It affects about 15 - 20% of premenopausal women, resulting in the disruption of normal life activities and interpersonal relationships [3].

The premenstrual symptoms

PMS is categorized by physical and affective symptoms during the luteal phase of the menstrual cycle. 95% of women in their reproductive age suffer from premenstrual symptoms, 5% of women get Severe, enervating symptoms [2]. Psychological symptoms comprises of irritability, mood swings, depression, difficulty in concentrating, anxiety, food cravings, and crying. The physical symptoms are abdominal bloating, breast tenderness, and headaches [2,3].

Luteal phase: The food craving phase

In females, food consumption varies athwart the menstrual cycle due to the fluctuations of sex hormones such as estrogen and progesterone. Research suggests that when associated with the follicular phase of the menstrual cycle, it is during the luteal phase, that increased caloric consumption occurs. These oscillations are attributed to the appetite stimulatory and suppressing actions of sex hormones [4] women in the luteal phase devour more food and choose sweeter edibles than when related to women in their follicular phase. It is observed that there are variations in food craving, food cue reactivity. During the luteal phase there is a 57% increase in food craving, the strongest craving happens just before menses that continues throughout menstruation [5].

Emotion dysregulation in PMS

Menstruation is regulated by sex hormones estrogen and progesterone. Studies show that these two reproductive hormones may have effect on emotion processing and regulation by its action on amygdala and prefrontal cortex. The most common emotional dysregulatory symptoms are irritability, depression, abdominal bloating, breast tenderness, and angry outbursts [6].

Premenstrual dysphoric disorder (PMDD) and allopregnanolone

During the premenstrual phase, 5% - 8% of women experience debilitating symptoms that leads to severe psychological stress and functional impairment. PMDD is often mistook as a heightened form of premenstrual syndrome. It is actually a severe mood disorder categorized with cognitive-affective symptoms which happens in a cyclic pattern during the premenstrual period [7]. PMDD is a cluster of

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symptoms like tension, irritability, depression, anxiety and fatigue which are related with heightened stress-sensitivity [4]. The etiology is pointed out towards Allopregnanolone (ALLO - a metabolite of progesterone) and gamma aminobutyric acid (GABA). Studies suggests that women with PMDD have a reduced sensitivity to GABA receptors owing to decreased levels of ALLO in the luteal [8].

The process model of emotion regulation

During the emotion generative process, the emotion can be regulated at different points using emotion-regulation strategies such as Reappraisal and suppression. They are used for lessening the negative emotional reactions. Reappraisal is a cognitive change, interpreting a potentially emotion-eliciting situation in non-emotional terms. suppression is a type of response modulation, constraining enduring emotion-expressive behaviour [4].

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