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The role of hormones and hormonal treatments in premenstrual syndrome.

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Premenstrual syndrome (PMS) is a menstrual cycle-linked condition with both mental and physical symptoms. Most women of fertile age experience cyclical changes but consider them normal and not requiring treatment. Up to 30% of women feel a need for treatment. The aetiology is still unclear, but sex steroids produced by the corpus luteum of the ovary are thought to be symptom provoking, as the cyclicity disappears in anovulatory cycles when a corpus luteum is not formed. Progestogens and progesterone together with estrogen are able to induce similar symptoms as seen in PMS. Symptom severity is sensitive to the dosage of estrogen. The response systems within the brain known to be involved in PMS symptoms are the serotonin and GABA systems. Progesterone metabolites, especially allopregnanolone, are neuroactive, acting via the GABA system in the brain. Allopregnanolone has similar effects as benzodiazepines, barbiturates and alcohol; all these substances are known to induce adverse mood effects at low dosages in humans and animals. SSRIs and substances inhibiting ovulation, such as gonadotrophin-releasing hormone (GnRH) agonists, have proven to be effective treatments. To avoid adverse effects when high dosages of GnRH agonists are used, add-back hormone replacement therapy is recommended. Spironolactone also has a beneficial effect, although not as much as SSRIs and GnRH agonists.