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Binding of [3H]paroxetine to serotonin uptake sites and of [3H]lysergic acid diethylamide to 5-HT_{2A} receptors in platelets from women with premenstrual dysphoric disorder during gonadotropin releasing hormone treatment.

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Changes in serotonergic parameters have been reported in psychiatric conditions such as depression but also in the premenstrual dysphoric disorder (PMDD). In addition, hormonal effects on serotonergic activity have been established. In the present study, binding of [3H]paroxetine to platelet serotonin uptake sites and binding of [3H]lysergic acid diethylamide ([3H]LSD) to platelet serotonin (5-HT)_{2A} receptors were studied in patients with PMDD treated with a low dose of a gonadotropin releasing hormone (GnRH) agonist (buserelin) or placebo and compared to controls. The PMDD patients were relieved of premenstrual symptoms like depression and irritability during buserelin treatment. The number of [3H]paroxetine binding sites (B_{max}) were significantly higher in the follicular phase in untreated PMDD patients compared to controls. When treated with buserelin the difference disappeared. No differences in [3H]LSD binding between the three groups were shown. The present study demonstrated altered platelet [3H]paroxetine binding characteristics in women with PMDD compared to controls. Furthermore, [3H]paroxetine binding was affected by PMDD treatment with a low dose of buserelin. The results are consistent with the hypothesis that changes in serotonergic transmission could be a trait in the premenstrual dysphoric disorder.