Calcium reduced PMS symptoms during the luteal phase of the menstrual cycle


Question
Can calcium supplementation reduce the symptoms that occur during the luteal and menstrual phases of the menstrual cycle in women with premenstrual syndrome (PMS)?

Main outcome measures
Mean symptom complex scores (a mean of 17 core PMS symptom ratings) and symptom factor scores (ratings of 4 symptom factors: negative affect, water retention, food cravings, and pain) measured by a daily self-assessment questionnaire (the PMS diary) during the luteal, menstrual, and intermenstrual phases of the menstrual cycle.

Main results
Compared with baseline, the calcium treated group had lower mean symptom complex scores during the luteal phase of the second (p < 0.05) and third (p < 0.001) treatment cycles. By the third treatment cycle, the mean luteal phase symptom complex score was reduced from baseline by 48% in the calcium treated group and 30% in the placebo group. By the third treatment cycle, the calcium treated group had lower scores for all 4 symptom factors compared with baseline and placebo during the luteal phase (both p < 0.05); negative affect was reduced by 45% for calcium compared with 28% for placebo, water retention was reduced by 36% for calcium compared with 24% for placebo, food cravings were reduced by 54% for calcium compared with 34% for placebo, and pain was reduced by 54% for calcium but increased by 15% for placebo. These effects were not shown for the menstrual or intermenstrual phases of the menstrual cycle.

Conclusion
After 3 menstrual cycles, calcium supplementation reduced core premenstrual syndrome symptoms and negative affect, water retention, food cravings, and pain during the luteal phase of the menstrual cycle in women with premenstrual syndrome.

Commentary
Concerned about a possible “quick fix” approach to the treatment of PMS, I read the study by Thys-Jacobs et al with caution, especially because it was funded by a drug company. This large experimental study, however, is well designed and provides convincing evidence that calcium supplementation reduces PMS symptoms. Calcium supplements for relief of the physical and emotional symptoms that plague women in their menstrual years, appear to be an attractive alternative to current medicinal treatments. Prescribing gonadotrophin releasing hormone agonists and serotonin reuptake inhibitors (eg, Prozac) with their documented side effects, perpetuates the medicalising of bodily functions that should be considered within the normal range of women’s experience.

During the past 50 years, many medicinal and non-medicinal treatments have been suggested for PMS including diet (limit salt, sweet foods, and caffeine); vitamin supplements (vitamin B6 and evening primrose oil); lifestyle changes (regular exercise, and decreased smoking and alcohol consumption); and alternative healing modalities (herbal therapies such as bach flower remedies and raspberry leaf tea [which interestingly is high in calcium], acupuncture, and aromatherapy). Anecdotal evidence and descriptive and small scale experimental studies support many of these treatments, but their efficacy is scientifically disputed. Although, as Thys-Jacobs et al note, questions remain about the required dosage of calcium carbonate and duration of treatment, calcium supplementation in the dosage tested (1200 mg/d) appears to be a relatively safe therapeutic option for treatment of luteal phase premenstrual symptoms (from ovulation to the onset of menstruation). It also has the added benefit of increasing the intake of calcium and therefore contributes to the prevention of osteoporosis. As women predominate in nursing and midwifery, the topic of effective treatment of PMS is personally and professionally pertinent. Calcium supplementation certainly adds to the available PMS therapeutic repertoire.

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