Quantitative Documentation of a Premenstrual Flare of Facial Acne in Adult Women

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Objective: To quantitatively document the presence and extent of a late luteal (premenstrual) acne flare in adult women.

Design: Case series.

Setting: Subjects were recruited from a general community dermatology practice and by advertising.

Subjects: Adult women 18 to 44 years old with normal periods who were receiving no treatment for their acne.

Main Outcome Measures: Acne lesion counts were surveyed over the follicular and luteal phases of 2 full menstrual cycles.

Results: Most (63%) of these women showed a 25% premenstrual increase in the number of inflammatory acne lesions.

Conclusion: This is the first quantitative documentation of the presence and degree of premenstrual acne flares in adult women.

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The mean number of inflammatory lesions increased 25.3% (P=.02) and mean comedonal lesions increased 21.2% (P=.05) in the luteal phase of the menstrual cycle in 48 observations of 23 subjects over 2 cycles.

**STATISTICAL ANALYSIS**

The t test was used to compare the changes in lesions from late follicular to late luteal menstrual phase. All statistical analyses were performed using SAS software (SAS Institute Inc, Cary, NC), version 8.1.

**RESULTS**

**DATA SET ANALYZED**

Forty-one subjects were initially enrolled in the study. All subjects who were available for both the late follicular and the late luteal phase visits were considered for evaluation of premenstrual flare. This included 25 subjects in month 1 and 23 subjects in month 2 for a total of 48 evaluation points.

**COMPLETIONS AND DISCONTINUATIONS**

Of the 41 subjects initially enrolled in the study, 18 did not complete the protocol: 2 were excluded owing to irregular menses, 2 were lost to follow-up, and 14 dropped out because of the requirement to not treat their acne for 2 months, despite their knowledge of this requirement at enrollment.

**EVALUATION OF PREMENSTRUAL FLARE**

There were 48 subject evaluations comparing the follicular to the luteal acne lesion counts. In the whole group, the mean age was 31±7.9 years (ranging from 18 to 44 years) with a mean duration of acne of 13.9±8.8 years.

The degree of acne flare was measured as an increase in the mean number of inflammatory lesions from the follicular to the luteal phase of the menstrual cycle. The mean number of inflammatory lesions increased from 9.5 to 11.9, or 25.3%, a statistically significant premenstrual acne flare (P=.02). The comedonal lesion counts also showed a statistically significant increase from 9.2 to 11.1, or 21.2% (P=.05) (Figure). An increase in the number of inflammatory lesions in the luteal phase was seen in 63% (30) of those evaluations. An increase in comedones was seen in 54% (26) of the evaluations.

**COMMENT**

Although it is widely quoted and seems to be common knowledge among the lay public, there is surprisingly little documentation of a premenstrual acne flare in adult women. Early articles quote the prevalence of premenstrual acne flares as high as 60% to 70%4 and as low as 27%,5 but no data are presented to support either statement. Although there has been a lot of speculation about the effect of hormones on the menstrual flare of acne, no hypotheses or data are available. Fortunately, in 2001 Stoll et al6 published the first well-documented study of the effect of the menstrual cycle on acne. They administered a questionnaire to 400 patients with acne during treatment encounters and found an overall 44% prevalence of premenstrual flare. The 39% of adult women (aged 20–33 years) who had flare was similar.

The present study is the first to document the premenstrual acne flare with acne lesion counts. In this study, 63% of 25 adult women had more acne in the late luteal (premenstrual) than in the late follicular phase of their menstrual cycle. Furthermore, there was a 23.2% increase in total acne lesions, 25.3% being inflammatory lesions and 21.2% comedones. The higher prevalence of women with premenstrual acne flares that we found compared with the study conducted with questionnaires6 may reflect the difference in methods for assessing acne (acne lesion counts vs questionnaires), the difference in ascertainment of patients (volunteers for a study vs patients seeking care in an office), and the smaller number of subjects in our study. However, we believe that our observational data complement and confirm the results obtained by questionnaire that a significant number of adult women have a premenstrual flare of acne.3

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**REFERENCES**