

Hormone Ratio in Pregnancy May Affect Psoriasis

BY KERRI WACHTER
Senior Writer

STOCKHOLM — Psoriasis improves considerably for some women during pregnancy, and now there are data pointing to the ratio of estrogen to progesterone as a possible explanation for this improvement, according to the results of a study presented at an international conference on psoriasis and psoriatic arthritis.

For the study, 47 pregnant women with psoriasis had their psoriasis assessed and hormone levels measured at 10, 20, and 30 weeks' gestation and at 6 and 24 weeks post partum, said Stefani Kappel, a fourth-year medical student at the University of California, Irvine. Twenty-seven menstruating psoriasis patients were also recruited as controls, and were assessed at similar intervals over a 54-week period.

During pregnancy, just over half of the women (55%) reported improvement in

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their psoriasis: 21% reported no change and 23% reported worsening. "This was very similar to findings that were reported in the retrospective studies," said Ms. Kappel, who collaborated with principal investigator Dr. Jenny E.

Murase, a dermatology resident at the university.

In the postpartum period, 65% of the women reported a worsening of their psoriasis, 26% reported no change, and 9% reported an improvement.

Psoriatic body surface area decreased significantly among the pregnant women at 10-20 weeks' gestation, compared with the women in the control group. Psoriatic body surface area increased significantly by 6 weeks post partum among the new mothers, compared with the control women.

"Although two-thirds of the patients reported a worsening of psoriasis in the postpartum period... it was more of a return to baseline," Ms. Kappel said.

The correlation between progesterone levels and improvement of psoriasis during pregnancy was not significant, nor was the correlation between estrone and improvement of psoriasis during pregnancy. There were moderate correlations between improvement in psoriasis and estradiol and estrone levels during pregnancy.

"Given that progesterone increases so much more than estradiol or estrone [during pregnancy], we hypothesized that it was the ratio of estrogen to progesterone that created an altered immunity," Ms. Kappel said. The correlation between improvement of psoriasis during pregnancy and the ratio of estrogen to progesterone was the strongest.

One patient in particular had a progesterone level that was six standard deviations above the average of the general population during the pregnancy period

but an estrone level that was within the normal range. Her psoriasis body surface area worsened from 52% to 65%. The researchers speculate that her ratio of progesterone to estrogen may have caused her worsening disease.

The study results illustrate that there is a shift from Th1 to Th2 immunity in pregnant patients. "This makes sense because Th1-mediated diseases, such as rheumatoid arthritis, psoriasis, and multiple sclerosis, tend to improve during pregnancy, where-

as Th2-mediated diseases such as lupus tend to worsen," Ms. Kappel explained.

In light of these findings, "estrogen, as a potential therapeutic option in conjunction with other treatment modalities, warrants further investigation," she added.

Progesterone is the hormone that increases the most in pregnancy—about 200-fold—and is the key hormone in uterine suppression during pregnancy. Most of the pregnant women in this study had elevated progesterone levels within the nor-

mal range for the general population. Estrogen suppresses T-cell immunity but is also known to stimulate B-cell-mediated immunity in pregnancy.

Estradiol increases 24-fold during pregnancy and is the most potent estrogen; estrone increases about 6-fold during pregnancy. Estrone is the least potent and is only produced in significant amounts during pregnancy. Most of the pregnant study patients had normal-range levels of all three estrogens during their pregnancies. ■

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