



Correlation Between Sex Hormone Levels and Corneal Hysteresis and Resistance Factor During Menstrual Cycle

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Purpose

To determine corneal biomechanical properties change during phases of the menstrual cycle and to correlate with sex hormone levels.

Methods

24 eyes of 24 healthy young women (18-25 years old) were recruited. Hormones including follicle stimulating hormone (FSH; mU/ml), luteinizing hormone (LH; mU/ml), progesterone (ng/ml) and 17- β estradiol (pg/ml) were measured in serum three times in a cycle during the follicular (day 3 to day 9), luteal phases (day 21 to day 28) and ovulation (day 13 to day 15). At every time point, corneal hysteresis (CH) and the corneal resistance factor (CRF) were measured with the Ocular Response Analyzer.

Results

The mean corneal hysteresis values at follicular, ovulatory, and luteal phases were 12.3mm Hg, 11.4mm Hg, and 12.7 mmHg ($p < 0.05$), and the mean corneal resistance factor values at the same time points were 10.3 9.7, and 10.6 mmHg ($p > 0.05$), respectively. There was a reverse correlation between serum estradiol and CH (Pearson correlation=-0.23, $P=0.041$)

Conclusion

Biomechanical property of cornea changes during a menstrual cycle that might be due to serum estradiol levels.

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Meeting Information

When:

April 25 - 29, 2014

Where:

The Boston Convention and Exhibit Center
Boston, MA