

Anterior Segment

THE ASSOCIATION OF ELEVATED BLOOD ESTRADIOL LEVEL WITH CORNEAL
ECTASIA IN PREMENOPAUSAL WOMEN

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PURPOSE: To examine whether elevated blood estradiol levels are associated with the development of corneal ectasia in women.

METHODS: We performed an observational case-control study of selected women diagnosed with corneal ectasia due to keratoconus or post-laser refractive surgery ectasia. Women of the same age range were selected from the hospital staff members to serve as a control group. Venous blood for estradiol measurement was collected on the second day of the menstrual period. Statistical analysis was performed to determine the association between blood estradiol levels and corneal ectasia.

RESULTS: Ninety-six women were enrolled: 36 in the keratoconus group, 29 in the post-laser refractive surgery ectasia group, and 31 in the control group. Estradiol levels [pg/ml] were 38.04, 43.45, and 28.68 in the keratoconus, post-laser refractive surgery ectasia, and control groups, respectively. This study found that women with corneal ectasia or keratoconus had significantly higher estrogen levels than those in the control group. Logistic regression was used to analyze the relationship between age, regularity of menstrual period, oral contraceptive pill use, estradiol blood level, and corneal ectasia. After adjustment for other factors, higher blood estradiol levels were associated with an increased corneal risk (OR 2.71; CI 95% 1.54-4.74).

CONCLUSION: Our findings suggest that Corneal ectasia is associated with elevated blood estradiol levels. Estradiol measurement could be useful for the prognostication of corneal ectasia in women who undergo laser refractive surgery or keratoconus.