Influences of percutaneous administration of estradiol and progesterone on human breast epithelial cell cycle in vivo.

Chang KJ¹, Lee TT, Linares-Cruz G, Fournier S, de Ligniéres B.

Abstract

OBJECTIVE:

To study the effect of E2 and P on the epithelial cell cycle of normal human breast in vivo.

DESIGN:

Double-blind, randomized study. Topical application to the breast of a gel containing either a placebo, E2, P, or a combination of E2 and P, daily, during the 10 to 13 days preceding breast surgery.

PATIENTS:

Forty premenopausal women undergoing breast surgery for the removal of a lump.

MAIN OUTCOME MEASURES:

Plasma and breast tissue concentrations of E2 and P. Epithelial cell cycle evaluated in normal breast tissue areas by counting mitoses and proliferating cell nuclear antigen immunostaining quantitative analyses.

RESULTS:

Increased E2 concentration increases the number of cycling epithelial cells. Increased P concentration significantly decreases the number of cycling epithelial cells.

CONCLUSION:

Exposure to P for 10 to 13 days reduces E2-induced proliferation of normal breast epithelial cells in vivo.