

PROLIFERATION ACTIVITY OF CULTURED PUBOCERVICAL FASCIA FIBROBLASTS OBTAINED FROM MENOPAUSAL WOMEN SUFFERED FROM STRESS URINARY INCONTINENCE.

Hypothesis / aims of study

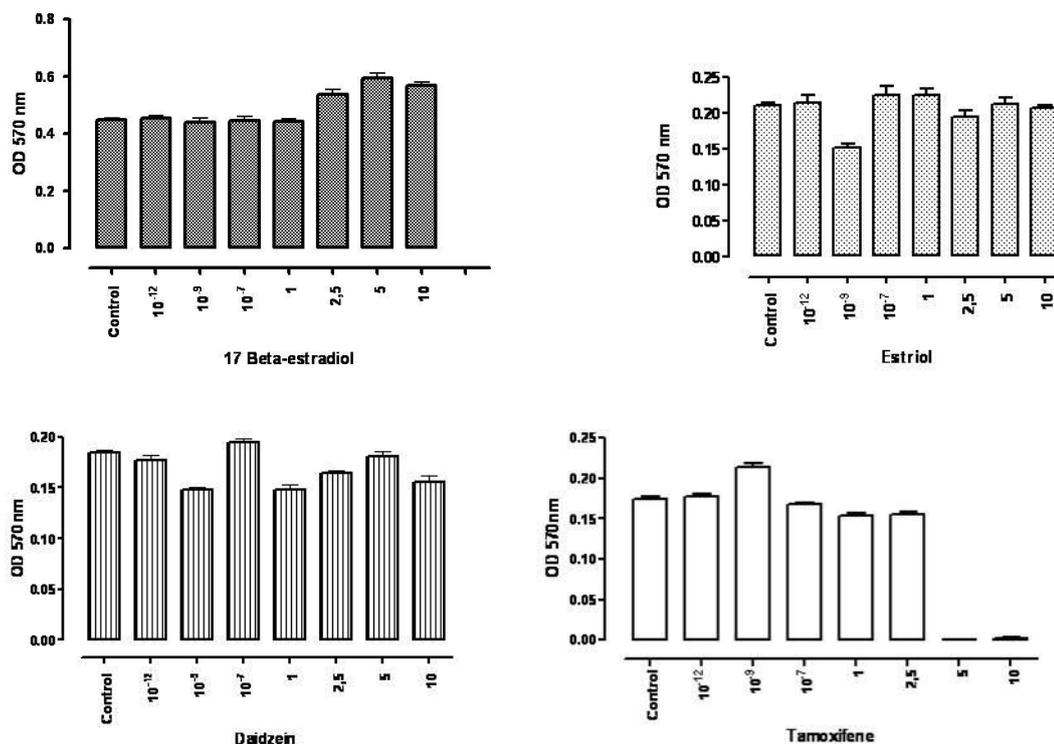
Fibroblasts proliferation and collagen deposition plays a key role in wound healing after polypropylene mesh implantation during midurethral sling procedures. While our understanding of this phenomenon is far from complete, there is bulk of evidence to suggest that steroids can regulate fibroblasts proliferation and collagen biosynthesis in connective tissue surrounding mono or multifilament polypropylene tape. The main purpose was to evaluate the proliferation ability of cultured pubocervical fascia fibroblasts after exposure to steroid hormones and drugs often used by menopausal women suffered from stress urinary incontinence.

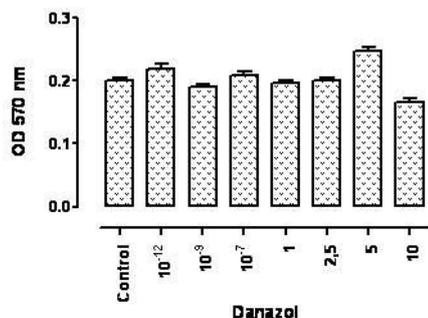
Study design, materials and methods

Specimens of human pubocervical fascia were obtained from 8 menopausal women during midurethral sling procedures. Fibroblasts were isolated and cultured by outgrowth technique. Cells after passage number 3 to 8 were used for assessment. Fibroblasts were cultured on 96-well microplates at density 3×10^4 cells/ml. Next day culture medium was changed and cells were exposed to serial dilutions (10^{-12} , 10^{-9} , 10^{-7} , 1, 2.5, 5 and 10 μ M/ml) of 17 β -estradiol, estriol, daidzein, danazol and tamoxifene in medium supplemented with only with Serum Replacement 2 (Sigma). Cell proliferation was assessed after 96 hrs using MTT method (Cell Proliferation Kit I, Boehringer). Formazan crystals were solublized overnight in SDS buffer and the product was quantified spectrophotometrically by measuring absorbance at 570 nm wave length using E-max Microplate Reader.

Results

Pubocervical fascia fibroblasts showed increased proliferation capacity after 17 β -estradiol than after estriol and daidzein treatment. Proliferative activity of pubocervical fascia fibroblast was lower in tamoxifene and danazol groups when compared to 17 β -estradiol and estriol treatment.





Interpretation of results

Compounds with estrogenic, antiestrogenic or progestagenic activity seem to modulate proliferative activity of cultured human pubocervical fascia fibroblasts. The results indicate that, at least in vitro, fibroblasts from pubocervical fascia taken from menopausal women suffering from SUI are more capable to proliferate after estrogen treatment. This is an indirect rationale for local estrogen treatment in case of female SUI.

Concluding message

This results suggests that pharmacological treatment with estrogens of incontinent women should be considered before the surgical procedure.

<i>Specify source of funding or grant</i>	None
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Bioethic Committee of Medical University School of Lublin, Poland
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes