

THE EFFECTS OF ESTROGEN REPLACE TREATMENT (ERT) ON ESTROGEN RECEPTOR EXPRESSION OF SUI RAT MODEL

Hypothesis / aims of study

To establish the wistar rat model of stress urinary incontinence(SUI) through imitating the birth trauma , the goal of the study was to approach the influence of menopause on the indexes consisting of urodynamic parameters , the expression of estrogen receptors on urethra(UA), the pelvic tissue, around the UA through the ovariectomy (double sides) rat and estrogen substitution. Moreover, the variability function between endogenous hormone and exogenous hormone was discussed.

Study design, materials and methods

A total of 30 wistar rats (mean age 13 weeks , weighed 200-300g), whose childbirths were all first time, were successfully established the SUI model through imitating the birth trauma by colpectasis after one day. The model were randomly separated into 3 groups. Group I was the shamoperated (10 rats), which were found the double ovariectomies without cutting .Group II was the menopause model group(10 rats), which were cut the double ovariectomies. Group III was the group I+group II (10 rats). After 16 weeks, the urodynamic examinations of these 30 rats were measured separately.

Results

Firstly, the values of abdominal leak point pressure (ALPP) of three groups were (30.70 ± 3.82) , (22.67 ± 3.17) and (23.42 ± 3.27) mmHg after 16 weeks. The values of ALPP in group II, III were lower than that in group I ($p < 0.001$). There was no significant difference of ALPP between group II and group III ($p = 0.643$). Secondly, the values of urinary bladder leak point pressure (BLPP) of three groups were (33.62 ± 4.24) , (23.51 ± 3.75) and (36.82 ± 4.41) mmHg separately. The values of BLPP in group I and III were higher than that in group II. There was no significant difference of BLPP between group I and group II ($p = 0.127$). Thirdly, the volume of urinary bladder were (1.07 ± 0.16) , (0.89 ± 0.16) and (1.17 ± 0.16) ml by turns. The values in group II were lower than that in group I and group III ($p = 0.022$, $p = 0.001$). There was no significant difference between group I and group III ($p = 0.210$). Fourth, the values about the estrogen receptors in urethra (UA), the pelvic tissue, around the UA in group II were lower than that in group I and III, which was no significant difference. There were no expression of estrogen receptors in levator ani muscle in all groups. However, the directors of these were varied. The value of the director in group I was lower than that in group II and III.

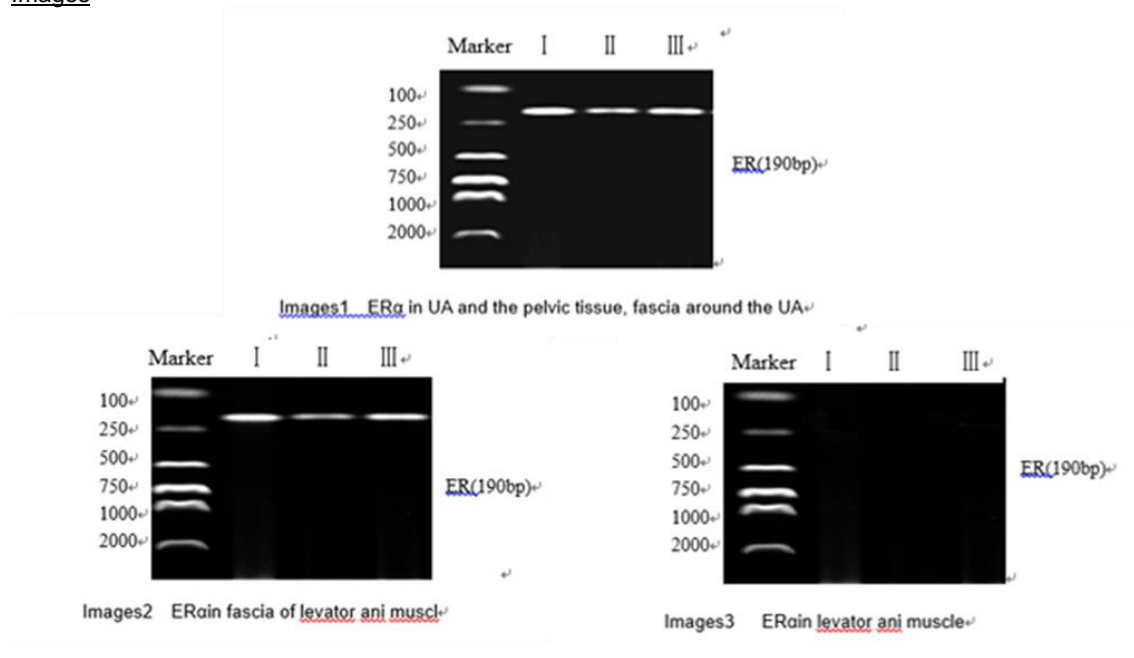
Interpretation of results

It was obviously helpful to improve the volume of urinary bladder and BLPP after ERT in group II. However, ALPP did not recover to the level of normality. especially after the birth trauma and menopause. This phenomenon maybe closely correlates with the change of the structure and function of the pelvic tissue. The level of estrogen was directed to the expression of the estrogen receptors in UA, the pelvic tissue and around the UA. The exogenous estrogen and endogenous estrogen have the same influence. There were no estrogen receptors in levator ani muscle. However, the diameter of that be correlated with menopause closely.

Concluding message

- (1) ALPP is an important index for evaluation of the SUI. It illustrated that symptom of the SUI get worse in post-menopause, then, the ERT was not the effectual treatment of the SUI;
- (2) The morbidity of post-menopause SUI correlate with the pelvic tissue, especially levator ani muscle, but it wasn't helpful to improve urinary continence function of levator ani muscle by ERT.

Images



Disclosures

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