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EXPRESSION OF AND LOCALIZATION OF ESTROGEN RECEPTOR BETA IN IC/PBS BLADDER

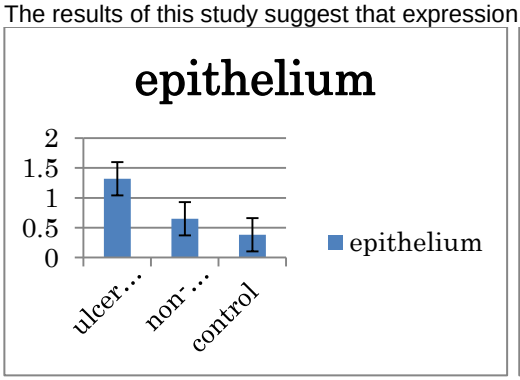
Hypothesis / aims of study
Since interstitial cystitis/ Painful bladder syndrome (IC/PBS) is a female-dominant disease and the prevalence in postmenopausal woman is relatively high, the involvement of estrogen in the pathogenesis of IC/PBS has been concerned. Estrogen receptor beta (ER beta) is identified as a dominant estrogen receptor in human bladder and recently there are two literature reporting that the expression of ER beta was decreased in rat chemical cystitis model and ER beta KO murine model showed the similar histological findings resembling IC/PBS, such as infiltration of inflammatory cells and erosion of epithelium.
This study is to investigate the expression and localization of ER beta in IC/PBS patients' bladder.

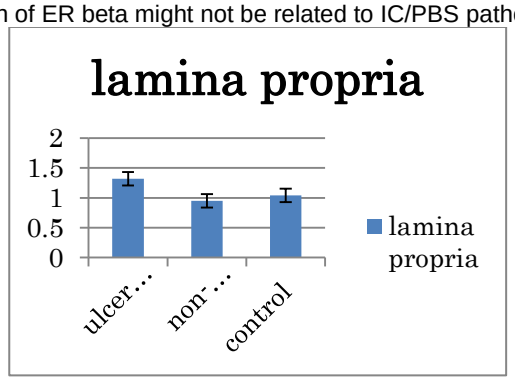
Study design, materials and methods
IC/PBS patients who were compatible with the NIDDK criteria were included. They completed O'Leary and Sant's indices and underwent cystoscopy followed by biopsy and hydrodistension under spinal anesthesia.
Bladder biopsies have been collected from 11 patients with Hunner's lesion , 10 patients of non-ulcer type and 12 controls. Immunohistochemistry (IHC) staining for ER beta was examined. The staining pattern was evaluated in epithelial cells and lamina propria both in terms of staining intensity and localization of positive cells. These findings were graded by a score from 0 (none), 1(a little), 2(moderate), to 3(severe). The histological slides were examined by blinded two investigators. Data were analysed using the Mann-Whitney U test.

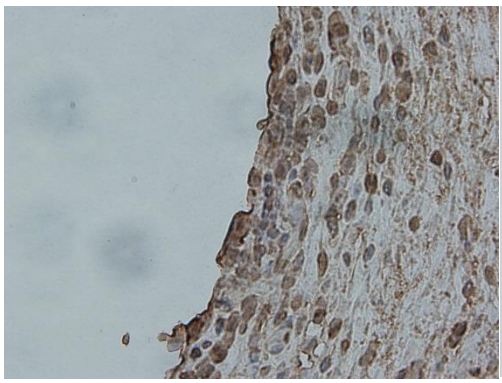
Results
A total of 33 cases (11 IC/PBS patients with Hunner's lesion, 10 patients without Hunner's lesion and 12 controls who are with low-risk solitary superficial bladder cancer) were collected. In the both IC/PBS group. denudation of epithelium and infiltration of inflammatory cells were remarkably increased compared to those of controls ($p<0.05$). Expression of ER beta as determined by IHC showed a mean score of 1.32 ± 0.93 in Hunner's lesion group, 0.65 ± 0.67 in non-ulcaer type75% and 0.38 ± 0.43 in control group. The difference between the Hunner's lesion groups and control was statistically significant for epithelium ($p=0.003$). There was a significant difference beween Hunner's lesion group and non-Hunner's lesion group as well($p=0.04$). However there was no significant difference between three groups for lamina propria.

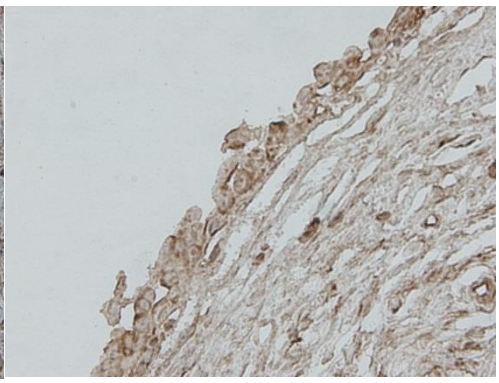
Interpretation of results
Unlike previous reports on animal models, immunohistochemical staining showed the elevated expression of ER beta positive cells in erosive epithelium of ulcer-type IC/PBS.

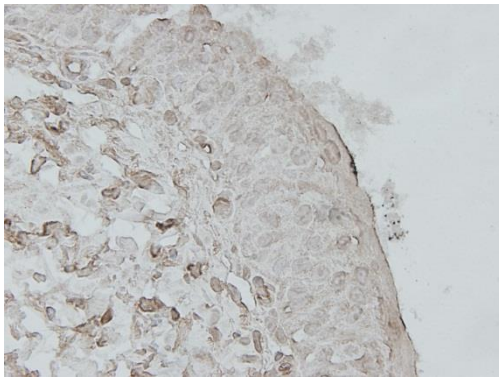
Concluding message
The results of this study suggest that expression of ER beta might not be related to IC/PBS pathophysiology.






Ulcer type


non ulcer type



control

References

1. Acar D et al. The effect of tamoxifen on bladder functions and histology, and the role of estrogen receptor ß in a rat chemical cystitis model.Neurourology and Urodynamics
2. Imanov O et al. Estrogen receptor beta-deficient female mice develop a bladder phenotype resembling human interstitial cystitis.Proc Natl Acad Sci U S A. 2007 Jun 5;104(23):9806-9. Epub 2007

Disclosures

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