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Oligoclonal Expression of T-Cell Receptor Beta Variable Genes in Normal Human Endometrium

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Abstract:

In spite of their key role in various immunological processes occurring in the endometrium, T cells- especially a b + subtype- residing in this mucosal tissue, have not been extensively explored. We present here the profile of expressed genes for variable region of b chain of T cell receptor (TCR) in normal endometrium as compared to peripheral blood. Samples from endometrium were taken from normal fertile women during routine check-up by Pipelle pipette or after hysterectomy operation. Total RNA from both blood and endometrial samples was extracted and RT-PCR using BV gene specific primers was performed. After southern blotting, hybridization with radiolabelled specific probe and autoradiography, relative expression of each BV family was determined. Clonal expansions of the over-expressed genes were studied by determining their CDR3 length polymorphism. A total of 12 blood and 14 endometrial samples were collected. Only one TCRBV gene (TCRBV7) was expressed significantly more and 3 genes less frequently in the endometrium compared to blood. Also, two other genes (TCRBV10 and 12) were found marginally more frequent in the endometrium. As for their clonality, all 3 TCRBV genes examined here showed a rather restricted (oligoclonal) and in some cases, very restricted (probably monoclonal) pattern in the endometrium in contrast to polyclonal patterns in the blood. Our results indicate the similarities between T cells residing in different mucosal tissues and support their common recruitment and functional potentials. Moreover, our findings provide a basis for future investigations about endometrial T cell involvement and their antigen specificities in different gynecological problems.

Keywords:

Endometrium ، Genes, T-Cell Receptor beta

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