# CHEMOKINE PROFILING IN ENDOMETRIOSIS USING LASER CAPTURE MICRODISSECTION

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Endometriosis is an inflammatory condition with elevated leukocyte infiltrate; defined as the ectopic growth of endometrium-like tissue, characterised by epithelial glands, outside the uterus. Chemokines selectively regulate influx and activation of leukocyte subpopulations. Their non-immune functions during tissue remodelling and disease pathogenesis include up-regulation of adhesion molecules, stimulation of inflammatory mediators, angiogenesis, cell proliferation and motility (1). The aims of the present study were to compare the chemokine mRNA profiles expressed by the epithelial glands of: eutopic endometrium from patients with / without endometriosis. Tissue heterogeneity in the endometrium and in ectopic lesions hinders precise study of the contribution of cell-specific inflammatory responses. Laser Capture Microdissection (LCM) was therefore utilised. Frozen eutopic curettings and ectopic endometriosis lesions were sectioned, H&E stained and glandular epithelium laser captured. 327 captured glands yields approximately 27 ng of RNA from each endometrial sample. To obtain enough RNA for gene array analysis and verification studies, cellular mRNA was amplified. Two rounds of linear mRNA amplification provided a sufficient yield of >1.8 μg from 1 ng of RNA. RNA from 4 patients and 4 controls were pooled, amplified and probed on gene arrays to build a chemokine profile. We identified 45 chemokines / receptors that are specifically abundant in glandular epithelium. 39 were highly upregulated (2- to 60-fold) in women with endometriosis compared to controls. In contrast, only 2 genes were downregulated more than 2-fold in endometriosis patients. Most genes have not been previously studied for their roles in endometriosis. Verification studies are currently being carried out. This is a novel study providing evidence of a distinct profile of the chemokine/receptors collectively in women with endometriosis.

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