ABSTRACT 007

Expression of membrane-type 2 and 3 matrix metalloproteinases in endometriosis and adenomyosis

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1. Background

Approximately 1-10% of women in the reproductive age suffer from endometriosis, a gynecological disease characterized by the presence of endometrial tissue in extra-uterine locations, such as the ovaries, pelvic peritoneum and rectovaginal septum. Matrix metalloproteinases (MMPs) are a family of zinc-dependent endopeptidases capable of degrading the different components of the extracellular matrix. Thus they are involved in different physiological processes such as cell proliferation, differentiation, angiogenesis, apoptosis and cell migration.

2. Objective

The present study aimed at elucidating the protein expression pattern of MT2-MMP and MT3-MMP in ectopic endometrium and eutopic endometrium of patients with or without endometriosis, and their possible role in the pathogenesis of endometriosis.

3. Methodology

Tissue samples were obtained after surgery from healthy endometrium, endometrium with endometriosis and adenomyosis, deep infiltrating endometriosis (DIE), peritoneal endometriosis (PE) and ovarian endometriosis (Ov). Expression of the MT-MMPs was analyzed using immunohistochemistry.

4. Results

Both proteins are expressed in the glandular and luminal epithelial cells of endometrium of patients with and without endometriosis. We did not observe cycle-dependent differences as well as no differences in the endometrium of patients with and without endometriosis. Interestingly, we identified a higher protein expression of both MT2-MMP and MT3-MMP in adenomyosis compared to eutopic endometrium of both endometriotic and non-endometriotic patients. In contrast, MT2-MMP was decreased in ovarian, peritoneal and DIE, as well as decreased MT3-MMP in peritoneal and DIE compared to eutopic endometrium and adenomyosis.

5. Conclusions

The equal expression of MT-MMPs in endometrium of cases with and without endometriosis in contrast to the impaired expression in adenomyosis and ectopic lesions suggest that the changes occurred after and not before implantation. The altered expression of MT2-MMP and MT3-MMP in adenomyosis and ectopic endometrium suggest distinct interactions in the different environments.