Action of Proteinase Inhibitor of *Enterolobium contortisiliquum*, EcTI, in Endometrial Cells of Patients with Endometriosis

Lobo, Y.A.¹, Paula, C.A.A.¹, Batista, F.P.¹, Silva, M.C.C.¹, Gonçalves, G.A.², Girão, M.J.B.C.², Sampaio, M.U.¹ e Oliva, M.L.V.¹

Departamento de ¹Bioquímica e ²Ginecologia, UNIFESP, São Paulo, Brazil

INTRODUCTION: Endometriosis is a chronic condition characterized by endometrial tissue outside uterine cavity. The events of endometriosis have been correlated to those described in cancer, especially those involved in cell proliferation, invasiveness and angiogenesis. *Enterolobium contortisiliquum* trypsine inhibitor (EcTI), a Kunitz-type serine proteinase inhibitor, was assessed in tumor cells. This study targets the action of EcTI on the viability, adhesion, migration and invasion in endometrial stromal cells of women with endometriosis. MATERIAL AND METHODS: The endometrial stromal cells of women with and without endometriosis was maintained in DMEM/F12 medium with 5% fetal bovine serum. The effect of EcTI was tested on cell viability (colorimetric assay with MTT (3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide), cell adhesion in the presence of collagen I, IV or laminin, migration and cell invasion (transwell assay in chambers with filters coated with matrigel).RESULTS AND DISCUSSION: EcTI did not reduce cell viability of endometrial cells of patients with and without endometriosis, however inhibited the migration and cell invasion of endometrial cells of women with endometriosis. In cell adhesion, EcTI showed different effects in each sample of endometrial cells of patients with endometriosis. Moreover, in zymography of culture medium of endometrial cells of patients with endometriosis, it was found the presence of gelatinolytic enzymes, being possibly matrix metalloproteinase-2 in control and pro-(matrix metalloproteinase-2) in treated with EcTI. EcTI increased expression of membrane type 1 metalloprotease and integrin β1 in cells of women with endometriosis. CONCLUSION: Our results suggested that by interfere in cell migration and invasion, key events in the development of endometriosis, EcTI is to be regarded as an interesting molecule in studies of this gynecology affection.

Keyword: EcTI, endometriosis, endometrial stromal cells.

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