



Immunohistochemical study of MMP-2, MMP-9, EGFR and IL-8 in decidual and trophoblastic specimens of recurrent pregnancy loss cases

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Abstract

Background and aim: Unexplained recurrent pregnancy loss has been a challenging research task to experts since there is no explicit pathophysiological mechanism and therefore, the treatment remains elusive. Immunological imbalance and morphological abnormalities are under investigation. This study aims to evaluate the implication of MMP-2, MMP-9, EGFR, and IL-8 in recurrent pregnancy loss cases.

Materials & methods: The study was carried out through comparison among two groups; the unexplained miscarriage group which consisted of 22 women, and the control group consisted of 18 women, who had electively terminated their pregnancies. Both groups were in the first trimester of gestation. The specimens included the trophoblast, decidua basalis, and decidua parietalis. The study was conducted via immunohistochemical methods. Antibodies were used against MMP-2, MMP-9, EGFR, and IL-8. The results were presented at a contingency table and were statistically analyzed with the Chi-Square Test (X²).

Results: There were remarkable disparities in some cases in the comparison of the two groups. MMP-9 was detected significantly high in recurrent pregnancy loss (RPL) cases, both on trophoblastic and decidual specimens (p-value < .00001), MMP-2 displayed no difference among the two groups (mild to moderate detection on trophoblast and almost negative on decidual tissues). EGFR was highly detected in trophoblastic tissue (p-value = .014). IL-8 detection was particularly different in both trophoblast and decidua parietalis of the two groups (p-value < .01).

Conclusion: The study revealed both morphological and immunological dysregulations that might participate in the RPL pathogenesis.

Keywords: EGFR protein; Spontaneous abortions; interleukin-8; matrix metalloproteinase 2; matrix metalloproteinase 9; placenta; tissues.