Methotrexate in unruptured ectopic pregnancy: comparing the single- and double-dose treatment

Abstract

Introduction: Ectopic pregnancy (EP) poses a great threat to pregnant women, which in case of misdiagnosis could lead to catastrophic death of the patients. EP patients tend to be treated with surgical or non-surgical treatments. One of the most common therapies in managing EP is Methotrexate (MTX), which the efficacy of its single- and double-dose treatments will be evaluated in this study.

Methods: one-hundred and twenty patients with EP, diagnosed in AL Zahra hospital in Tabriz, Iran, were entered the study and were divided randomly into two groups of 60 (though 4 of the patients in second group left the study due to discontent, afterwards). For the first group 50 milligrams (mg) of intramuscular (IM) single-dose MTX was administered, while for the second group two doses of 50 mg IM MTX was administered. The levels of β-hCG were evaluated before the treatment, fourth and seventh days, and second and fourth weeks after treatment. Also, sonographic findings, clinical symptoms before treatment and adverse effects after treatment were recorded.

Results: Success rate for the group that was treated with single dose of MTX was 85%, while for double-dose group was 94.6%, however, there was no statistically significant difference between two groups. In addition, there was no significant relation between 2 groups in endometrial thickness, presence of abdominal free fluid and gestational age with the success rate. Regardless, the initial levels of β-hCG was and indicator of treatment success rate. In patients with double-dose MTX, required period of time for β-hCG levels to reduce down to zero was significantly lower than the other group. Cut-off point for success rate with single-dose MTX was 3350, with the sensitivity of 88.9% and specificity of 76.5% and for the other group was 3894.5, with the sensitivity of 66.7% and specificity of 71.7%.

Conclusion: No significant difference was observed between single- and double-dose MTX groups in treating EP. The initial levels of β-hCG and mass size were the only factors capable of predicting treatment success rate. Double-dose regimen lowered β-hCG down to zero earlier than single-dose. Based on Cut-off points, if initial β-hCG levels were below 3350, single-dose treatment, between 3350 and 3894.5 double-dose treatment, and finally, above 3894.5, other treatments (probably surgery) is suggested.

Keywords: ectopic pregnancy, single-dose, double-dose, Methotrexate