High incidence of monozygotic twinning after assisted reproduction is related to genetic information, but not to assisted reproduction technology itself

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Patients: 1876 patients receiving infertility treatment between 2000 and 2012. Monozygotic (MZT) pregnancies (A: 23) were compared with women who delivered dizygotic twins (B:423), singleton pregnancies (C:880), or aborted (D:389).

Main outcome measures:
A genetic survey on multiple pregnancies in the close family. Micromanipulation technique, the length of embryo cultivation, type of cultivation media, basal FSH, estradiol level on the day of human chorionic gonadotrophin administration, number of oocytes, total consumption of gonadotropins, consumption of gonadotropins needed for recovery of one oocyte.

Design of the study
Analysis of a collected database

Results:
No difference existed between the incidence of MZT in cycles that did or did not use micromanipulation techniques. In addition, the length of embryo cultivation or type of cultivation media used did not affect the results. E2 levels and implantation rates were significantly higher in group A. The incidence of MZT in families of group A was significantly higher than groups B and C.

Conclusion: We propose that the high incidence of MZT in infertility clinic patients is conditioned by hereditary factors, and good ovarian function only facilitates the expression. It is recommended that young women with a positive family history and good ovarian function undergo elective single embryo transfer and proper counselling is advisable.