Embryo selection impact on early pregnancy loss

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Contexts - early pregnancy loss is one of the most significant clinical problems in the field of reproductive medicine. Nearly 80% of pregnancies are lost during the first trimester of pregnancy mostly because of embryo chromosomal abnormalities, uterine abnormalities, endocrine defects, thrombophilia, thyroid disorders and infections. Increased probability of chromosomally normal embryo selection using time-lapse morphokinetics analysis could improve early pregnancy loss rate in patient undergoing infertility treatment.

Objective - to compare early pregnancy loss rate between conservative embryo cultivation/selection and time-lapse system morphokinetics analysis groups.

Methods - embryo development was retrospectively analysed between two study groups.

Patients - study group included 130 embryo transfers selected using time-lapse morphokinetics analysis (Basile et al., 2014); control group included 388 embryo transfers cultivated/selected conservatively.

Main Outcome Measures - we have found no statistically significant difference in age, endometriosis, polycystic ovary syndrome, poor responders status, previous ART success, oocytes retrieved, oocyte quality, day 5 single embryo transfer (not more than 2 embryos per transfer), clinical pregnancy rate (49% study group v.s. 45% control group). Embryos cultivated using time lapse morphokinetic analysis were achieved by oocyte fertilisation by olygospermic partner sperm (p=0.04) and PICS1 (p=0.01) was used more often (criterion of time-lapse morphokinetic analysis choice). 27.5% of control group pregnancies were lost before 12 weeks of pregnancy, but time-lapse morphokinetic analysis group early pregnancy loss rate was decreased - 6.1% (p=0.01).


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