

Time-lapse evaluation of human embryo development in single versus sequential culture media—a sibling oocyte study

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Abstract

Objective To compare the dynamics of early development between embryos cultured in single and sequential media.

Design Randomized, comparative study.

Setting Private IVF centre.

Patients A total of 446 metaphase II oocytes from 51 couples who underwent oocyte retrieval procedure for intracytoplasmic sperm injection. Forty-nine resulted in embryo transfer.

Intervention Oocytes were split between single and sequential media produced by the same manufacturer and cultured in a time-lapse incubator.

Main outcome measures Morphokinetic parameters until the embryos reached the 5-cell stage (t_5), utilization, clinical pregnancy and implantation rates.

Results Embryos cultured in single media were advanced from the first mitosis cycle and reached 2- to 5-cell stages earlier. There was not any difference between the durations for cell cycle two ($cc_2=t_3-t_2$) and s_2 (t_4-t_3). The utilization, clinical pregnancy and implantation rates did not differ between groups. The proportion of cryopreserved day6 embryos to two pronuclei oocytes was significantly higher in sequential than in single media.

Conclusions Morphokinetics of embryo development vary between single and sequential culture media at least until the

5-cell stage. The overall clinical and embryological parameters remain similar regardless of the culture system.