COMPARISON BETWEEN PARAFFIN AND MINERAL OILS USED FOR HUMAN EMBRYO CULTURE AT THE CPMA OF LIEGE

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Introduction: Microdrop medium with oil overlay is the most common method of embryo culture in use today. The oil cover prevents medium evaporation, maintains the appropriate pH and osmotic pressure. Oil also protects media against microbial contamination and toxic components. We compare here the effects of Ovoil™ (paraffin oil, Vitrolife) and Liteoil® (mineral oil, LifeGlobal) on in vitro fertilization results.

Study design: Forty seven patients (mean age 32±6 years) undergoing assisted reproduction with ICSI treatment were enrolled between June and December 2014. After ICSI, oocytes were randomly divided into two groups. Oocytes were cultured in 20 µl micro droplets overlaid by Ovoil (group 1) or by Liteoil (group 2) from day 0 to day 3. Fertilization rate was assessed around 18 hours after insemination (hpi) and embryos were observed for early cleavage 25 hpi. Embryo morphology was controlled on day 2 and 3 before fresh embryo transfer or cryopreservation. A total of 665 inseminated oocytes were included.

Results: There was no difference between the two groups (group 1 vs group 2) in term of fertilization (77.8% vs 73.7%), early cleavage rate (38.3% vs 34.1%), and percentage (%) of embryos reaching the 4 cells stage at day 2 and embryo morphology at day 3. Nevertheless, clinical pregnancy rate is slightly enhanced in the Liteoil group (42%) in comparison to Ovoil group (38%) without significant difference.

Conclusions: The use of Ovoil or Liteoil did not affect oocytes fertilization and embryo development. These finding are very preliminary and a larger study is ongoing.