

Human Oocyte Cryopreservation: Preliminary Results of Survival, Fertilization and Cleavage Rate of Frozen Oocyte Using a New Modified Slow – Freeze Protocol.

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Objective: The objective of this study is to describe the survival rate, fertilization rate, and cleavage rate of a new slow-freeze technique for human oocytes.

Design: Oocyte freeze/thaw protocols are designed to minimize the damage that occurs from intracellular ice formation and high solute concentration (solution effect). The present study examines the rates of oocyte survival, fertilization, and cleavage in a group of patients undergoing IVF with oocyte cryopreservation. The study is being conducted under IRB approval.

Patients: Women age < 35 years with day 3 FSH <10 who are undergo controlled ovarian hyperstimulation and IVF-ET are included in this study. MII oocytes are selected for cryopreservation using a temperature and sucrose modified slow-freeze protocol with PrOH as a cryoprotectant agent.

Results: An interim analysis was conducted in the first 42 cycles using frozen-thawed oocytes. 6 oocytes were thawed in each cycle. From a total of 271 frozen-thawed oocytes, the survival rate was 92.6% (251/271). ICSI was performed on 247 oocytes resulting in a 90.3% (223/247) fertilization rate and an 86.1% (192/223) cleavage rate (Fig. 1). 38/42 cycles resulted in embryo transfer using embryos derived from frozen oocytes. Preliminary outcomes resulted in 22 clinical pregnancies (57.8%) with 7 healthy live births to date.

Conclusion: The goal of this study is to evaluate a novel protocol and technique that can lead to an improved method for oocyte cryopreservation. Interim analysis of outcomes in the initial 38 frozen-thawed oocyte cycles appears to be at least as good as outcomes achieved in our 2006 ICSI and embryo freezing programs. Further study of a larger patient population is currently underway to assess the efficacy of a new slow-rate oocyte freezing protocol.

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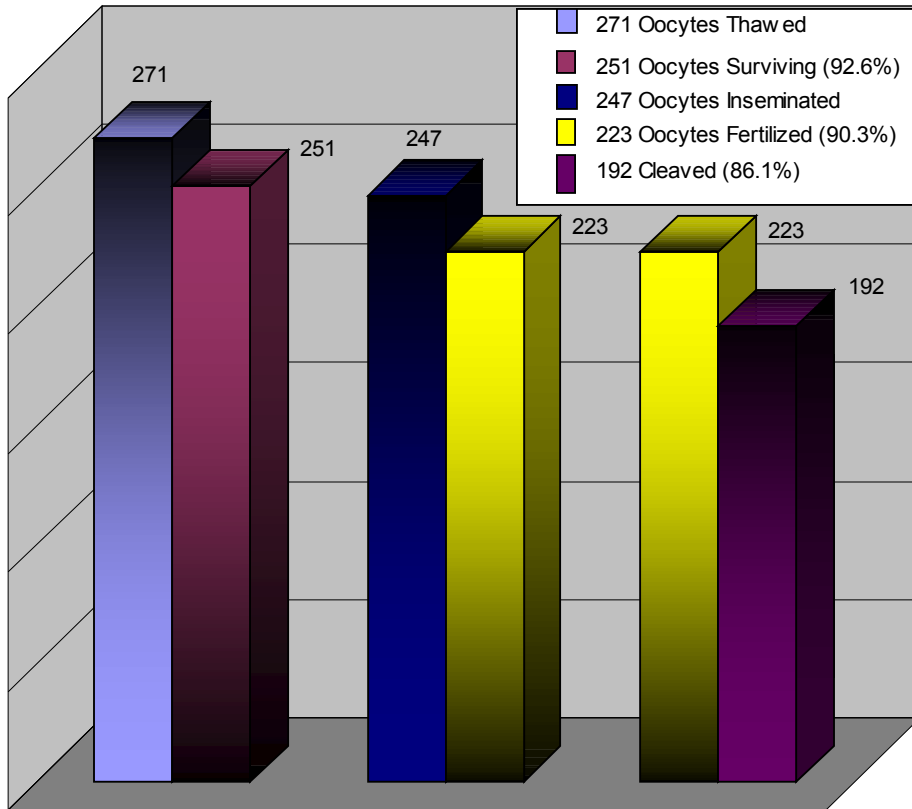


Fig 1: Survival Rate, Fertilization Rate, Cleavage Rate with a Modified Slow-Freeze Protocol.