Study of oocyte survival by slow freezing and vitrification methods

A prospective, randomized and comparative study of oocyte survival by slow freezing and vitrification methods. Dr. Suresh Babu Chaduvula, Abstract: Aim and Objectives: To determine the efficacy of slow freezing and vitrification methods in the survival of oocytes. Introduction: Material and Methods: It is a prospective comparative study done in Abha infertility center, Abha , Kingdom of SaudiArabia. Results: Discussion: Conclusion: In our study survival of oocytes are found to be good and better by Cryopreservation method than than the Vitrification method.

Keywords: Cryopreservation [CRY], Vitrification [VTR], Oocyte survival [OS]

Introduction: Cryopreservation allows the transfer of a limited number of embryos back to the uterus and the storage of the remaining embryos for future use, thus maximizing the cumulative effectiveness of an in vitro fertilization (IVF) cycle. In addition, cryopreservation makes feasible the postponement of embryo transfer (ET) in a future cycle, thus decreasing the incidence of ovarian hyperstimulation syndrome in high-risk patients, while it maintains the probability of pregnancy Michelmann 1.

Slow freezing is the most widely used cryopreservation method of human embryos and has become the preferred method in most IVF units . During slow freezing , the embryo is exposed to subzero temperatures in a controlled rate . Alternatively, human embryos can be cryopreserved by vitrification, during which the embryo rapidly enters a glass-like state with rapid cooling rates . Efstratios 2. Slow freezing is known as equilibrium freezing due to the exchange of fluids between the extra and intracellular spaces and results in safe reezing without serious osmotic and deformation effects to cells Mazur 3. This technique is accepted to be a safe procedure

because of the use of relatively low concentration of cryoprotectants that might not cause serious toxic and osmotic damage. On the other hand , vitrification is a non-equilibrium method and may be regarded as a radical approach in which ice crystal formation is totally eliminated. Nevertheless, it requires an extremely high cooling rate along side much higher concentrations of cryoprotectants when compared with slow freezing Vaja 4.

Since the publication of the first reports demonstrating the feasibility of vitrification for cryopreservation of human embryos Trounson 5, this method is becoming increasingly popular among embryologists. This is due to the fact that vitrification is characterized by significant advantages regarding cost and time requirements as compared with slow freezing. The main concern, however, is the need for using high concentrations of cryoprotective solutions that might lead to osmotic shock, affecting embryo survival Quinn 6.

This comparative study aims to evaluate the efficacy of slow freezing and vitrification cryopreservation of human embryos in terms of postthawing survival rates and clinical outcomes , attempting to assess which of the two methods is more advantageous . Material and Methods: It is a prospective comparative study done in Abha infertility center, Abha , Kingdom of SaudiArabia. Results: File 00 File 01 File 02 Discussion: Conclusion: References: Acknowledgements: