

GM-CSF MEDIA USED FOR FROZEN EMBRYO TRANSFERS RESULTS IN PROMISING IMPLANTATION RATES IN PATIENTS WITH RECURRENT PREGNANCY LOSS

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Introduction: Granulocyte macrophage colony stimulating factor (GM-CSF) functions as a cytokine within the female reproductive tract (Robertson et al. 1992). GM-CSF containing embryo cultures were associated with a two-fold increase in blastocyst rates (Sjoblom et al. 1999), protection from culture-induced embryo stress (Chin et al. 2009) (Ziebe et al. 2013), more inner mass cells and reduced apoptotic nuclei within blastocysts (Sjoblom et al. 2002) and an increased vitality of embryos to gestation week 12 and live birth (Chin et al. 2009) (Poverini et al. 2018). This study questions how using GM-CSF as the embryo transferring medium in Frozen Embryo Transfer (FET) procedures would affect implantation rates in Repeat Pregnancy Loss (RPL) patients.

Objective: To examine implantation rates associated with the use of GM-CSF as an embryo transferring medium in FETs for RPL patients

Materials and Methods: A retrospective observational preliminary study was carried out, from March-May 2018, consisting of 27 RPL patients aged between ages 26 – 43. IVF/ ICSI was performed using autologous gametes for all patients and blastocysts were vitrified. All patients underwent elective single FETs. 1-Step™ GM-CSF (2ng/mL GM-CSF and 5mg/mL Human Serum Albumin) was equilibrated at 37°C at 5% O₂ and 5-6% CO₂ (pH 7.28) for 16-18 hours. Once thawed, embryos were placed in 1-Step™ GM-CSF for 2 hours prior to transfer.

Implantation was defined by a value > 5mIU/mL on the first beta Human Chorionic Gonadotropin 2 weeks after the FET.

Results: 51.85% of females had a successful implantation when GM-CSF was used as the embryo transferring medium during their FET procedure.

Conclusion: This study suggests that the temporary incubation of embryos in GM-CSF prior to FETs is associated with a promising implantation rate in RPL patients undergoing IVF/ICSI. However, a follow-up study is necessary to assess the live birth rate.