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CONTROLLED OVARIAN STIMULATION EFFECTS ON SOLID ORGAN TRANSPLANT RECIPIENTS: A LITERATURE REVIEW

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Introduction

Assisted reproductive technology (ART) in solid organ transplant recipients (SOTRs) represents a multidisciplinary challenge. While transplantation improves fertility, factors such as immunosuppressive therapy, comorbidities and the risk of obstetric complications require careful assessment. ART techniques, especially in vitro fertilization (IVF), offer reproductive options, but must be tailored to the specific needs of transplant patients. A personalized approach and intensive monitoring are essential to optimize maternal and fetal outcomes.

Results

A total of 30 SOTRs (kidney, liver, or pancreas), with a documented history of infertility, was enrolled. The majority underwent long protocol COS, using recombinant FSH or hMG at a dosage ≤ 225 IU. Ovulation triggering was performed after a mean stimulation duration of 10.4 days. The mean oestradiol peak level recorded was 4139.4 pg/mL. The number of oocytes retrieved per cycle was approximately 11, with a recorded fertilization rate of 57%. Embryo transfers were performed on fresh cycles either day 2, 3, or 5, involving the transfer of 1, 2, or 3 embryos. A total of 23 singleton pregnancies and 7 multiple pregnancies were achieved. Maternal complications observed during gestation included hypertensive disorders such as gestational hypertension and preeclampsia, as well as anaemia, gestational diabetes and deep vein thrombosis. From the fetal perspective, complications were primarily related to intrauterine growth restriction (IUGR). Only 9 patients (30%) experienced deterioration of the graft, and just 1 (3%) the rejection. The majority delivered by caesarean section due to uncontrolled blood pressure, despite pharmacological therapy or failed induction of labour. Most of the newborns were preterm, with birth weights ranging from 672 to 2655g and APGAR scores and pH levels within normal ranges, where indicated.

Objectives

A systematic review of the literature in PubMed, Embase and Scopus databases from the earliest publication reported up to February 2025 was performed. The aim of the study was to assess the effects of controlled ovarian stimulation (COS), as part of an IVF protocol, in SOTRs with a documented history of infertility. This evaluation focused on the potential risk of graft rejection or progressive graft deterioration associated to COS, as well as on the broader implications for maternal health, pregnancy outcomes and long-term neonatal development.

Conclusions

COS as part of an IVF protocol, offers an option for achieving pregnancy in SOTRs with infertility. While the approach shows promising results, with a manageable risk of graft deterioration and maternal complications, it is also important to highlight the need for intensive monitoring. Fetal outcomes were generally favourable, with most of the newborns showing normal APGAR scores and pH levels, despite preterm birth. The long-term effects of ART on the health of these women remain poorly understood. Further research is crucial to assess the lasting impact of ART on both maternal health and graft function, ensuring comprehensive care for this unique patient population.