

**Abstract Title:** Maternal and Neonatal outcome following IVF in India

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**Abstract:** With over 12 million children being born worldwide with IVF techniques and approximately 2.5 million cycles being performed every year, it becomes imperative to evaluate the success rates and address the safety issues associated with the technique. Improvements and technical refinements over the years have led to an improvement in global IVF success rates and minimising complications making it a safe and successful option for fertility treatment. Success in Assisted Reproductive Techniques (ART) as defined by the Society of Assisted Reproductive Technology (SART) as the delivery of a child (rather than a positive pregnancy test) as the main outcome of interest, since this is the outcome of patient's desire. A woman's chances of having a pregnancy and a live birth in IVF/ICSI are influenced by many factors, some of which are patient related and outside a clinic's control (e.g., the woman's age or the cause of infertility). With the rise in the number of IVF/ICSI cycles carried out world over and for better pregnancy rates, multiple embryos are transferred leading to increased materno-fetal complications. More robust data are required in terms of pregnancy outcomes (clinical pregnancy rates, clinical abortion rates, multiple pregnancy rates, live birth rates, maternal and perinatal complications associated with IVF/ICSI to inform such increasing number of couples who opt for IVF/ICSI. The national preliminary report by the SART, 2021 reports success rates of 44.5% live birth rates per intended egg retrieval (own eggs) in women < 35 yrs and 9.6% in women aged 41-42 years. In cycles using donor eggs, live birth rates were 44.7% in fresh oocytes and 41.4% using vitrified oocytes. Unfortunately, because of lack of registries, such streamlining of clinical data is lacking in India. A study published by our group reported incidence of clinical pregnancy rate in self oocytes group undergoing fresh ET as 40.8%, abortion rate of 27.3%, multiple pregnancy rate of 27.3%, live birth rate 31.9% and maternal complications as 17.7%; In women undergoing fresh transfer with donor eggs, these rates were 50.2%, 32.5%, 36.9%, and 23.7% respectively. In those undergoing thaw ET using vitrified embryos, these were 42.9%, 31.3%, 29.6%, and 17.8%, respectively. We also reported that there was no significant difference in birth defects resulting from IVF-ICSI with autologous or donor oocytes in India. The births resulting from IVF-ICSI pregnancies did not tend to have a higher rate of birth defects a compared with natural conceptions. Maternal and fetal complications in ART are dictated by multiple factors; the most common being the maternal age at pregnancy and the incidence of multiple pregnancy. Increased maternal age carries additional risks of preeclampsia, gestational diabetes and additional risk of multiple pregnancy puts the pregnancy at risk of preterm delivery; abruptio, and prematurity. With improvements in IVF techniques (blastocyst culture, Preimplantation genetic screening), emphasis is being laid on single embryo transfers to minimise the multiple pregnancy rates and offer better materno-fetal outcomes in IVF pregnancies.

**Area of expertise:** Infertility, IVF, Reproductive Genetics