

Elective Single blastocyst transfer vs. Double blastocyst transfer

Suresh Kumar Yadav, Dr.Manju Nair, Ambika G



Cloudnine Fertility, Bangalore

Introduction

Historically, in order to achieve higher pregnancy rates multiple embryos were transferred after IVF. However, this practice is being reassessed as it leads to multiple pregnancy which is known to cause adverse maternal outcomes such as miscarriage, premature labour, diabetes and low blood pressure. It also has negative impact on fetal outcomes such as low birth weight, fetal death and long term disabilities such as cerebral palsy. A recent study of 50,258 births following IVF and ICSI pregnancies reported that twins accounted for half the total neonatal deaths and one-third of the perinatal deaths (ESHRE, 2012). Apart from these medical conditions, delivery of multiple babies and their long term care incurs heavy economic costs on the community.

With the development of sequential culture media it is possible to successfully culture human embryos till the blastocyst stage. Several studies have shown that high pregnancy rates can be achieved when embryos are replaced in the uterus post compaction stage (Styer et al, 2008).

Methodology

The aim of this study was to compare the efficacy of IVF/ICSI cycles undergoing fresh elective single blastocyst transfer (eSBT) vs. double blastocyst transfer (DBT).

This is a retrospective data analysis of 582 patients undergoing standard insemination or intracytoplasmic sperm injection (ICSI) as clinically appropriate using their own oocytes from January 2012 to June 2015. Inclusion criteria was age of patient less than 35 years and having developed more than one blastocyst after IVF/ICSI. All the embryos were cultured to blastocyst stage in sequential media followed by transfer of two blastocysts or transfer of one blastocyst and cryopreservation of the remaining.

Pregnancy outcomes such as live birth rate, miscarriage rate and incidence of twins were analyzed between both the groups.

Table 1: Patient Parameters

	eSBT (n=149) (Mean±SD)	DBT (n=433) (Mean±SD)	p Value
Age	31.14±3.90	31.82±4.41	0.102
Total dose of Gonadotropins	1974.88±674.84	2175.18±707.47	0.007
Days of Stimulation	9.733±1.30	10.032±1.36	0.022
Progesterone on HCG	0.892±0.54	0.936±0.49	0.447
Oocyte number	14.725±5.76	13.910±5.95	0.147
Endometrium thickness on HCG	10.27±1.78	10.08±1.62	0.267

Results

Fig 1: Embryo development

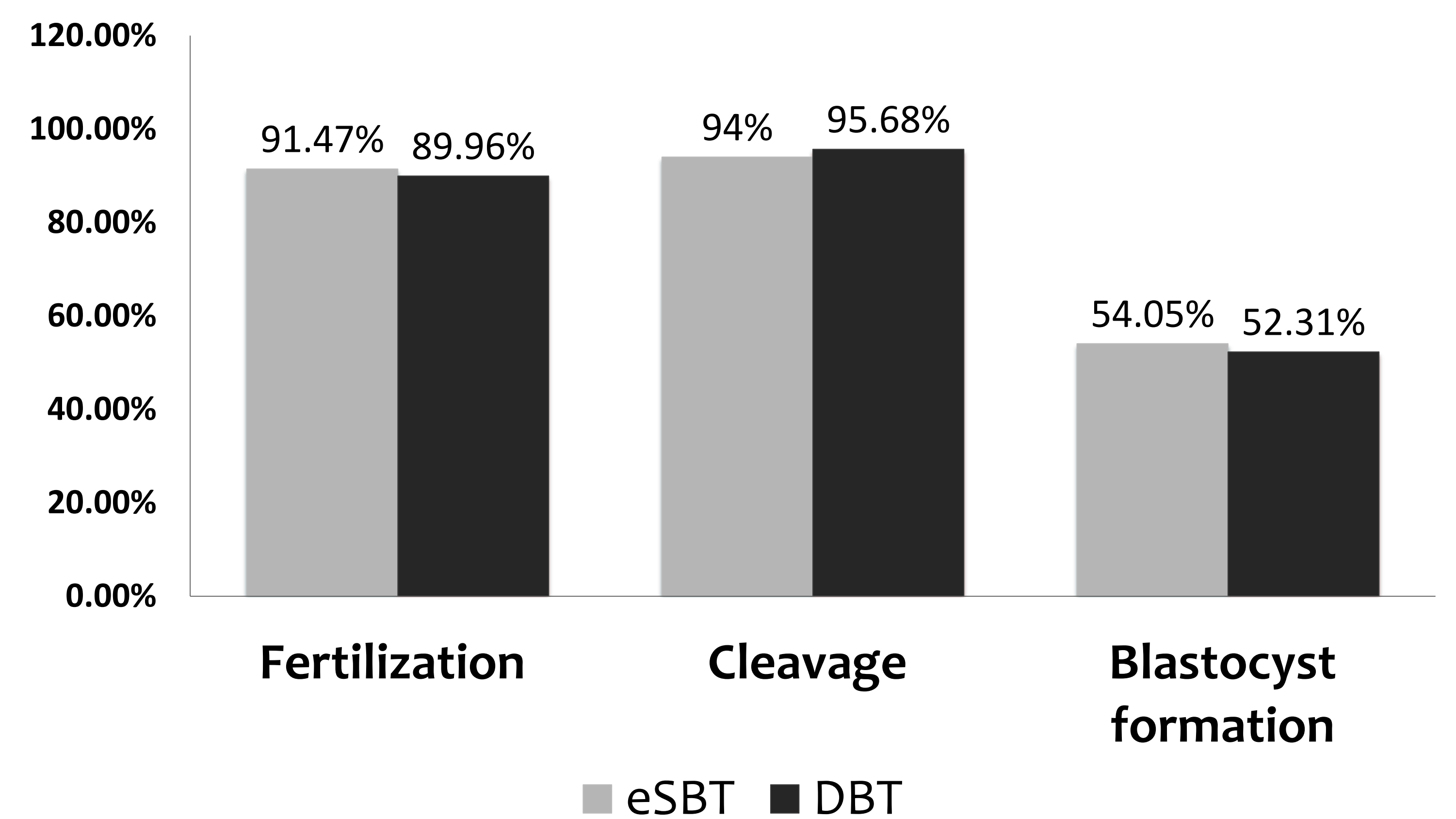
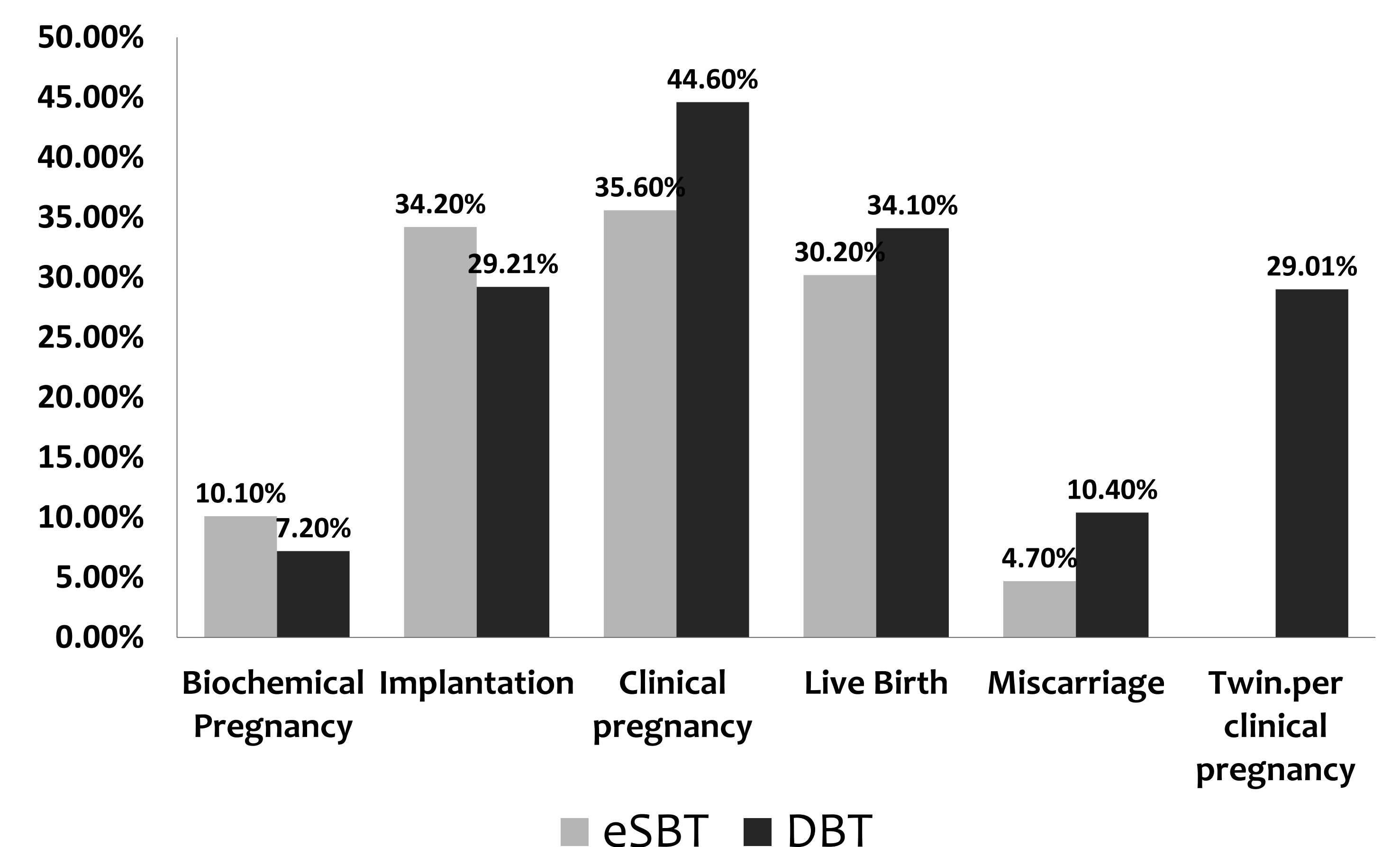


Fig 2: Main Outcome Measures



Conclusion and Discussion

Clinical pregnancy rate, implantation rate and live birth rate are comparable between eSBT and DBT. Miscarriage rate is statistically significantly lower in eSBT. The preferred outcome of IVF is a healthy singleton baby. Single blastocyst transfer is an effective method to achieve this while reducing the risk of multiple births without compromising with the pregnancy outcome. Given the promising potential of vitrification, the remaining blastocyst can be cryopreserved for future use of the patient.