A 5-year Multicenter Randomized Controlled Trial of In Vitro Fertilization with Personalized Blastocyst Transfer versus Frozen or Fresh Transfer

Patients often undergo multiple failures before additional investigations occur.

3 in 10 women have a displaced Window of Implantation (WOI)
21 Publications

13 Igenomix

8 External
Day 5/6

- **pET**
  Personalized Embryo transfer
  - ERA
    Cryopreserved embryos
  - HRT

- **FET**
  Frozen Embryo transfer
  - Cryopreserved embryos
  - HRT

- **ET**
  Fresh Embryo transfer
  - Transfer

HRT
Live birth rate

- Cumulative LBR at one year follow up
- Implantation rate
- Pregnancy rate
- Biochemical and clinical miscarriages
- Ectopic pregnancy
- Obstetrical, neonatal outcomes
- Cost-effectiveness
Up to 37 years

Body mass index: 18.5-30

IVF first appointment

Normal ovarian reserve
(AFC ≥ 8; FSH < 8)
The stimulation protocol was decided by the doctor. Blastocyst transfer (day 5 or 6)

Exclusion criteria

- Recurrent miscarriage.
- Severe male factor (<2 million/ml).
- Implantation failure (>3 failed cycles).
- Any pathology affecting the endometrial cavity and hydrosalpinx must be previously operated.

Post-Randomization Exclusion Criteria

- P4 level ≥ 1.5ng/ml at the day of hCG administration in all groups.
- Absence of blastocysts for embryo transfer.
- Risk of OHSS in the fresh ET group.

Patients using PGT-A were not excluded
Per Protocol Analysis

**LIVE BIRTH RATE**

- **pET**: 56.2%
- **FET**: 42.4% with +13.8pp
- **ET**: 45.7% with +10.5pp

(pp) Percentage points
**Per Protocol Analysis**

- **Cumulative Live Birth** rate in pET increased 15.8 pp* vs FET 22.3 pp* versus ET

- **Live Birth** rate in pET increased 13.8 pp vs FET 10.5 pp vs ET

- **Implantation** rate in pET increased 14.1 pp* vs FET 18.7 pp* vs ET

- **Pregnancy** rate in pET increased 18.2 pp* vs FET 14.3 pp vs ET

- **Cumulative Pregnancy** rate in pET increased 24.4 pp* vs FET 32.2 pp* vs ET

*Statistically significant
Per Protocol Analysis

Obstetrical, delivery and neonatal outcomes were not different among pET, FET and ET.

Cost-effectiveness
Estimated cost of a delivery with at least 1 LB at first attempt.

Europe
- FET: €23,448
- pET: €19,555
- ET: €15,674

USA
- FET: $50,482
- pET: $42,658
- ET: $36,780
Intention to Treat Analysis

Cumulative pregnancy rate significantly increased in the pET group versus FET and ET

- pET: 93.6%
- FET: 79.7%
- ET: 80.7%
ERA maximizes the chances of pregnancy

Our study confirms that a personalized embryo transfer is superior to the conventional frozen embryo transfer.

71% of women gave birth after 1 year

Live birth rate

**FIRST EMBRYO TRANSFER**

- **pET**: 56.2%
- **FET**: 42.4%

\[+13.8\text{pp}\]

**CUMULATIVE RATE**

- **pET**: 71.2%
- **FET**: 55.4%

\[+15.8\text{pp}\]
Pregnancy rate

- pET: 72.5%
- FET: 54.3%
  +18.2pp

- pET: 72.5%
- ET: 58.5%
  +14pp
IVF 1.0

Chromosomal Embryo Factor: 15%

Endometrial Factor: 14%

LIVE BIRTH RATES %

IVF 2.0

NCT03530254 (May 21, 2018)
NCT3558399 (June 15, 2018)
This study shows that performing ERA in a patient’s first IVF cycle significantly improves their chance of having a baby.