ESHRE 2026
L26　P-623
London, United Kingdom, 2026.7.6-8

Reduced Implantation but Comparable Post-implantation Outcomes After Transfer of Mosaic Versus Euploid Embryos Diagnosed by PGT-A or PGT-SR

Y. Ymamoto[1], T. Nakano[1], Y Nakaoka[1], Y Morimoto[1,2]

1. IVF Namba Clinic, 2. HORAC Grand Front Osaka Clinic

Study question

Do pregnancy, neonatal, and early developmental outcomes after implantation differ between transfers of mosaic and euploid embryos diagnosed by PGT-A or PGT-SR?

Summary answer

Mosaic embryos showed significantly lower implantation rates than euploid embryos; however, post-implantation pregnancy outcomes, neonatal outcomes, and developmental outcomes at 18 months were comparable between the two groups.

What is known already

PGT-A and PGT-SR are widely used for embryo selection based on the assumption that chromosomal status assessed by trophectoderm biopsy reflects that of the inner cell mass. While implantation outcomes of euploid and aneuploid embryos generally align with inner cell mass chromosomal status, mosaic embryos may show discordance depending on mosaic patterns. Although healthy live births following mosaic embryo transfer have been reported, the clinical validity of transferring mosaic embryos remains controversial.

Study design, size, duration

This retrospective single-center study evaluated 293 single embryo transfers performed between April 2020 and December 2024. Embryos obtained by conventional IVF or ICSI were cultured to the blastocyst stage, biopsied at the trophectoderm, and analyzed by next-generation sequencing following PGT-A or PGT-SR.

Participants/materials, setting, methods

Mosaic embryos were defined as containing 30-70% aneuploid cells. Implantation was defined by a gestational sac, and miscarriage as pregnancy loss before 12 weeks. Implantation and miscarriage rates were compared between euploid and mosaic embryos. Neonatal outcomes included birth weight, length, congenital anomalies, and obstetric complications. Growth and neurodevelopment at 18 months were assessed using body weight, height, and the Kinder Infant Development Scale. Statistical analyses used Welch's t-test or chi-square test ($p<0.05$).

Main results and the role of chance

The implantation rate of mosaic embryos (n=47) was significantly lower than that of euploid embryos (n=246) (57.4% vs. 71.5%, $p<0.05$), whereas miscarriage rates were similar (22.2% vs. 27.3%). In miscarriage cases following mosaic embryo transfer, chorionic villus analysis was concordant with PGT findings, including trisomy 16 mosaicism.

Among live births derived from euploid embryos (n=128) and mosaic embryos (n=21), gestational age at delivery (38w6d vs. 38w4d), birth weight (3083.2 g vs. 3054.2 g), and length (49.1 cm vs. 48.7 cm) did not differ between groups. Placental weight tended to be lower in mosaic embryo-derived neonates (562.9 g vs. 602.7 g), although this did not reach statistical significance ($p=0.08$). Hypertensive disorders of pregnancy (9.5% vs. 4.7%) and placenta accreta (0.0% vs. 4.7%) occurred at comparable rates, while preterm premature rupture of membranes was more frequent after mosaic embryo transfer (23.8% vs. 7.0%, $p<0.05$). No congenital anomalies were observed in either group.

At 18 months, children derived from euploid (n=18) and mosaic embryos (n=4) showed similar body weight (11.0 kg vs. 11.0 kg), height (81.4 cm vs. 80.1 cm), and overall developmental scores (65.0 vs. 69.1), with motor, language, and cognitive indices all within normal age-specific ranges.

Limitations, reasons for caution

When both euploid and mosaic embryos were available, euploid embryos were preferentially transferred. The limited number of mosaic embryo transfers and follow-up cases may have reduced statistical power for some outcomes. Selection bias and sample size limitations warrant cautious interpretation.

Wider implications of the findings

Despite lower implantation rates, pregnancy, neonatal, and 18-month developmental outcomes after mosaic embryo transfer were comparable to those of euploid embryos once implantation occurred. These findings suggest that implantation potential and post-implantation prognosis should be considered separately when mosaic embryo transfer.