Live Birth and Miscarriage Outcomes Across PGT-A Result Categories:

Euploid, Mosaic, Aneuploid, and Untested Embryo Transfers

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Retrospective Cohort Study · Poster Presentation

BACKGROUND

Preimplantation genetic testing for aneuploidy (PGT-A) is used to select chromosomally normal (euploid) embryos for transfer, aiming to improve implantation and live birth rates while lowering miscarriage risk. Mosaic and aneuploid embryos are increasingly considered when euploid embryos are unavailable, but real-world outcome data for these categories — and for cycles without PGT-A — remain limited.

OBJECTIVE

To compare live birth rates (LBR), miscarriage, and overall pregnancy loss across PGT-A result categories — euploid, mosaic, aneuploid, and untested — among single frozen embryo transfer (eSET) cycles at a private fertility practice.

DESIGN

Retrospective observational cohort study.

3,435
single frozen embryo transfer (eSET) cycles analyzed, 2023–2024

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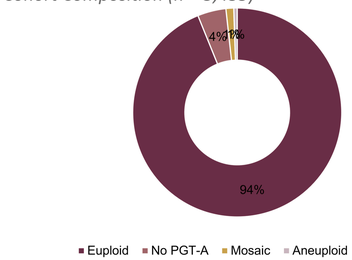
PGT-A result categories compared: euploid, mosaic, aneuploid, untested

METHODS

3,435 single frozen embryo transfer (eSET) cycles completed 2023–2024 at a private fertility practice, stratified by chromosomal status:

- **Euploid (reference)** 3,199
- **No PGT-A result** 150
- **Mosaic** 41
- **Aneuploid** 18

Cohort Composition (n = 3,435)



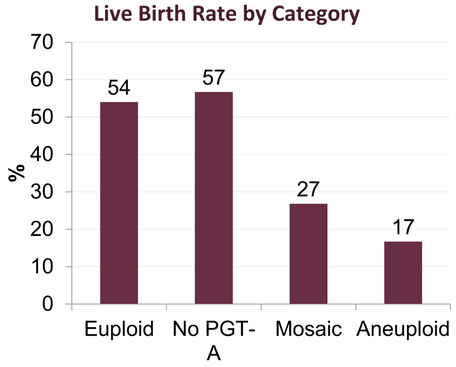
STATISTICAL ANALYSIS

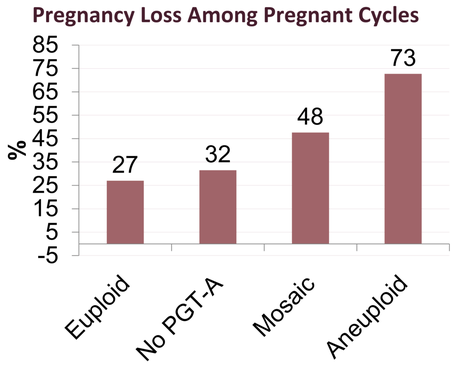
Fisher's exact test and chi-square test compared outcomes across groups (each vs. the euploid reference), with significance set at $p < 0.05$.

RESULTS

Outcome	Euploid (Ref)	Mosaic	Aneuploid	No PGT-A	Overall p
n =	3,199	41	18	150	—
Mean age (yrs)	35.7 ± 4.3	37.5 ± 4.7	39.0 ± 5.2	37.1 ± 3.6	—
Live birth %	54.0%	26.8% ***	16.7% **	56.7% ns	<0.001
Not pregnant %	25.9%	48.8% **	38.9% ns	17.3% *	0.003
Clinical MC %	8.3%	17.1% ns	22.2% ns	11.3% ns	0.161
Biochemical %	11.0%	7.3% ns	16.7% ns	13.3% ns	0.624
Any loss %	20.0%	24.4% ns	44.4% *	26.0% ns	0.041
Among pregnant cycles only (implantation occurred)					
MC % (among preg.)	11.3%	33.3%	36.4%	13.7%	—
Any loss (preg. %)	27.0%	47.6%	72.7%	31.5%	—

*p-values vs. euploid reference (Fisher's exact); overall p by chi-square across all four groups. * p<0.05 ** p<0.01 *** p<0.001 ns = not significant. MC = miscarriage. Any Loss = clinical MC + biochemical + ectopic + stillbirth.*





KEY FINDINGS

72.7%
of aneuploid transfers ended in pregnancy loss once implantation occurred (vs. 27.0% euploid)

8.3% → 22.2%
clinical miscarriage rate, euploid vs. aneuploid transfers

$p < 0.001$
overall difference in live birth rate across all four PGT-A categories

LIMITATIONS

Small sample sizes for the mosaic (n=41) and aneuploid (n=18) groups limit statistical power. Findings represent a clinically meaningful trend warranting further investigation in larger cohorts.

CONCLUSIONS

- Live birth rates declined significantly with mosaicism and aneuploidy, while no-PGT-A cycles performed comparably to euploid embryos (56.7% LBR, ns).
- Mosaic and aneuploid transfers carried markedly higher rates of implantation failure and pregnancy loss.
- Findings support prioritizing euploid embryo transfer and counseling patients on elevated loss risk with mosaic/aneuploid transfer.

Support: None.