Diminished Ovarian Reserve as a Systemic Aging Marker in PGT-A Tested eSET Cycles: Implications Beyond Oocyte Quality

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BACKGROUND

Diminished ovarian reserve (DOR) is a well-established predictor of poor IVF outcomes in general infertility populations, historically linked to lower oocyte yield and higher embryo aneuploidy risk. Whether DOR retains independent prognostic value once an embryo has already been confirmed euploid by PGT-A remains unclear — raising the question of whether genetic testing neutralizes its downstream impact on transfer success.

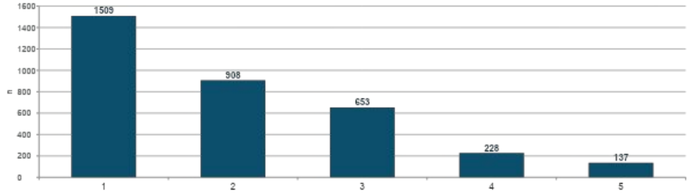
OBJECTIVE

To determine whether DOR independently predicts live birth rate (LBR) or implantation failure following confirmed-euploid single frozen embryo transfer (eSET) in PGT-A tested cycles, in contrast to prior literature linking DOR to IVF outcomes in non-PGT-A populations.

DESIGN AND METHODS

Retrospective cohort study design. 3,435 PGT-A tested eSET cycles (2023–2024), stratified by DOR diagnosis and maternal age group. Primary outcome: LBR per transfer.

Cohort by Maternal Age Group



Statistical analysis: chi-square, Fisher's exact test, logistic regression, and Spearman correlation (p < 0.05).

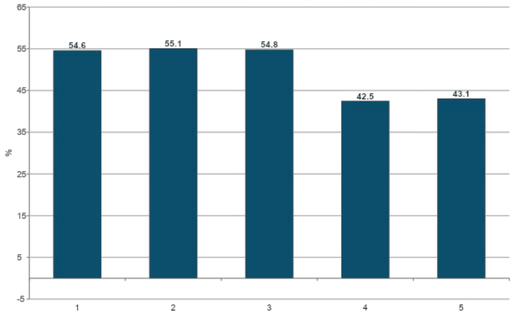
Support: None.

RESULTS

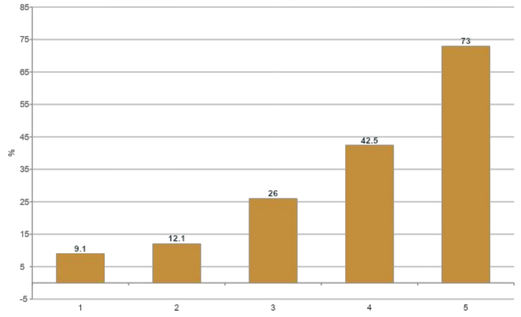
Age Group	n =	DOR Rate	Donor Egg %	LBR %	Not Pregnant %
< 35	1,509	9.1%	1.1%	54.6%	24.3%
35–37	908	12.1%	0.9%	55.1%	25.0%
38–40	653	26.0%	1.7%	54.8%	26.0%
41–42	228	42.5%	7.5%	42.5%	33.8%
43+	137	73.0%	38.7%	43.1%	38.0%

DOR = diminished ovarian reserve. LBR = live birth rate per transfer, confirmed-euploid eSET cycles only.

Live Birth Rate by Age Group



DOR Rate by Age Group



r = 0.31, p < 0.001 – DOR rate rises steadily with maternal age (Spearman correlation), yet LBR stays essentially flat across age groups until 41+, once euploidy is confirmed.

KEY FINDINGS

OR 0.94
DOR was not an independent predictor of live birth on multivariate analysis (p = 0.54)

13×
higher donor oocyte use among DOR vs. non-DOR patients (12.9% vs. 1.0%)

p < 0.001
maternal age — not DOR — was the significant independent predictor of outcome

LIMITATIONS

Single-practice retrospective design; DOR diagnostic criteria (AMH/AFC thresholds) were not standardized across the cohort, and high donor-oocyte utilization in the oldest age group may have selected out more affected patients before transfer.

CONCLUSIONS

- DOR did not independently predict live birth rate or implantation failure once euploidy was confirmed by PGT-A — contrasting with prior non-PGT-A literature.
- DOR functioned mainly as a clinical marker shaping the decision to use donor oocytes, rather than as a predictor of transfer success itself.
- Findings suggest PGT-A may effectively neutralize DOR's downstream impact on euploid transfer outcomes.