

# Is preimplantation genetic testing associated with increased risk of abnormal placentation?

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## Background

- Preimplantation genetic testing (PGT) is intended to improve implantation rates and reduce risk of genetic conditions
- IVF, particularly frozen embryo transfer (FET), is associated with abnormal placentation
- It is not known if PGT increases this risk



# **Hypothesis**

• Among pregnancies conceived after FET, use of PGT is associated with higher rates of abnormal placentation

### **Study Design**

- Retrospective cohort study
- Inclusion : FET at UCSF, followed by delivery at UCSF
- Exposure: PGT
- Primary outcome: composite of abnormal placentation (placenta accreta, placenta previa, vasa previa, marginal or velamentous cord insertion, circumvallate placenta, placental abruption, placenta membranacea, circummarginate placenta, placenta succenturiate, bipartite placenta, and retained placenta)

#### Results

- Of 311 FET pregnancies included, 51% had PGT
- Compared to non-PGT group, PGT group was older and more likely to undergo single embryo transfer
- PGT group and non-PGT group had **no differences** in
- Composite of abnormal placentation (26.6% vs 27.4%, aOR 1.01, 95% CI 0.59-1.74)
- Individual components of composite outcome

#### Conclusion

• Among pregnancies conceived by FET, use of PGT is not associated with increased risk of abnormal placentation

Among pregnancies conceived after frozen embryo transfer, preimplantation genetic testing is NOT associated with increased risk of abnormal placentation.



**Questions?** Take a picture of this QR code to access the poster or email Dr. Swanson at Katherine.Swanson@ucsf.edu

Age at conception (years) Race Non-Hispanic White **Non-Hispanic Black** Hispanic Asian/Pacific Islander Native American Multiple Races Tobacco use Body mass index (kg/m<sup>2</sup>) Nulliparous Prior cesarean delivery Infertility diagnosis Male factor Polycystic ovary syndrom Other anovulation Endometriosis Tubal factor Decreased ovarian reserv Uterine factor Other Unexplained

#### FET with PGT FET without PGT

Placenta accreta

Placenta previa

Vasa previa

Marginal cord insertion

Velamentous cord insertion

Placental abruption  $\frac{0\%}{0\%}$ 

Circumvallate placenta

Placenta membranacea

Placenta succinturiata

Bipartite placenta

Circummarginate placenta

Retained placenta



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	With PGT n=158	Without PGT n=153	p-value
	39 (36-41)	36 (34-40)	0.003
			0.41
	89 (56%)	95 (56%)	
	2 (1%)	1 (1%)	
	8 (5%)	14 (9%)	
	50 (32%)	40 (26%)	
	1 (1%)	1 (1%)	
	8 (5%)	9 (6%)	
	2 (1%)	0	0.16
	22.8 (20.7-25.2)	22.5 (20.5-25.2)	0.08
	113 (72%)	97 (63%)	0.13
	16 (10%)	15 (10%)	0.93
			<0.001
	18 (11%)	25 (16%)	
е	13 (9%)	8 (5%)	
	5 (3%)	4 (3%)	
	2 (1%)	7 (5%)	
	5 (3%)	8 (5%)	
/e	22 (14%)	37 (24%)	
	2 (1%)	0	
	46 (29%)	13 (9%)	
	45 (29%)	51 (33%)	

