



OVO

CLINIQUE

HOW DOES ART SINGLETONS DIFFER FROM NATURALLY CONCEIVED (NC) SINGLETONS; COMPARISON OF PERINATAL DATA OF 872 ART TO 19317 (NC) SINGLETON BABIES



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INTRODUCTION

It has been suggested that the fresh transfer of single embryo following ovarian stimulation is associated with smaller birth weight than naturally conceived singleton for a similar gestational age. Perinatal outcomes from a large Danish database (Henningsen A, et al, march 2011) showed that the birth weight of stimulated IVF singleton babies is significantly smaller than naturally conceived ones.

AIM

To compare the birth weight and the average gestational age at birth of modified natural in vitro-fertilization (mIVF) conceived singleton babies to the stimulated IVF (sIVF), frozen embryo transfer (FET) and naturally conceived (NC) singleton babies?

MATERIAL AND METHOD

The gestational age and birth weight of singleton babies conceived from (246) mIVF, (405) sIVF and (233) FET following the single embryo transfer on day 2, 3 or 5 post-fertilisation at ovo fertility were compared to 19,317 naturally conceived singleton babies delivered at a community hospital in Montreal. Secondary outcomes included the type of delivery and gender.

All patients at clinique ovo who underwent IVF cycles (2010-2014), female age up to 38.11 years, Singleton IVF babies were included.

And the following were excluded : Mother age less than 22 years, more than 39 years old, gestational age < 20 weeks, Children with a birth weight less than 200 grams, more than 1 embryos transfer and BMI more than 35 kg/m².

RESULTS

1. MN-IVF VS stimulated IVF

	Modified	Simulated	Crude OR (95% CI)	p	Adjusted OR (95% CI)	p
Gestational age			Stimulated is the reference			
Preterm birth (<37 weeks)	N=31	N=37	1.43 (0.87-2.38)	NS	1.34 (0.78-2.28)	NS
Mean (weeks)	38.84	38.78		NS		
Birth Weight			Stimulated is the reference			
Low Birth weight (<2,500 g)	N=32	N=32	1.15 (0.65-2.03)	NS	1.08 (0.60-1.95)	NS
Mean (SD) in grams	3301.4	3263.5		NS		

* Adjustements are made for maternal age, parity, type of delivery and child gender

2. MN-IVF VS Frozen

	Modified (n=243)	Frozen (n=229)	Crude OR (95% CI)	p	Adjusted OR (95% CI)	p
Gestational age			Frozen is the reference			
Preterm birth (<37 weeks)	N=31	N=20	1.53 (0.84-2.77)	NS	1.35 (0.72-2.52)	NS
Mean in weeks	38.8	39.2		0.047		
Birth Weight			Frozen is the reference			
Low Birth weight (<2,500 g)	N=22	N=12	1.80 (0.87-3.73)	NS	1.57 (0.74-3.33)	NS
Mean in grams	3301.4	3452.9		0.004		

* Adjustements are made for maternal age, parity, type of delivery and child gender

3. MN-IVF VS spontaneous conceived

	Modified (n=243)	Spontaneous (n=19317)	Crude OR (95% CI)	p	Adjusted OR (95% CI)	p
Gestational age			Spontaneous is the reference			
Preterm birth (<37 weeks)	31	862	3.09 (2.11-4.53)	<0.0001	1.00 (0.02-56.88)	NS
Mean	38.8	39.1		0.008		
Birth Weight			Spontaneous is the reference			
Low Birth weight (<2,500 g)	22	746	2.57 (1.65-4.01)	<0.0001	3.39 (1.59-7.23)	0.002
Mean in grams	3301.4	3353		NS		

* Adjustements are made for maternal age, ype of delivery and child gender (we don't have the parity for spontaneous)

4. Comparing of the outcome of ART singleton& to the Natural conception singleton

Outcome	Modified (n=246)	Stimulated (n=405)	Frozen (n=221)	Spontaneous (n=19,317)	p-value	
Gestational age	Mean in weeks	38.84	38.78	39.18	39.11	<0.0001
	Min-max	19.43-42.14	20.57-42.57	33.00-41.71	17-43	
Birth weight	Mean in grams	3301.36	3236.51	3452.97	3353.14	<0.0001
	Min-max	1630-4445	1415-5125	1013-4808	150-5602	
Gestational age	No preterm birth (≥37)	215 / (87.4)	368 / (90.9)	212 / (91.4)	18455 / (95.5)	<0.0001
	Preterm (<37 weeks)	31 / (12.6)	37 / (9.1)	20 / (8.6)	862 / (4.5)	
Birth weight	No low birth w (≥2500 g)	22 / (9.4)	32 / (8.2)	12 / (5.4)	746 / (3.9)	<0.0001
	Low (<2500 g)	213 / (90.6)	356 / (91.8)	209 / (94.6)	18571 / (96.1)	

CONCLUSION

MN-IVF mean GA at birth 38.8 weeks compared to 39.1 weeks for NC; which was showed to be of statistical yet questionable clinical significance. No difference between the outcome of stimulated and modified natural IVF. Average birth was comparable amongst all cohort except frozen embryo transfer babies which were significantly higher.

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