

## Supplementary Materials

### **Perinatal outcomes of neonates born from different endometrial preparation protocols after frozen embryo transfer: a retrospective cohort study**

Short title: endometrial preparation and perinatal outcomes

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**Table S1 Pregnancy-related complications of singleton deliveries following FET with different endometrial preparation protocols stratified according to the number of embryo transfer**

	Single embryo transfer					Multiple embryo transfer				
	NC	OS	HRT	aOR (95%CI) <sup>a</sup>	aOR (95%CI) <sup>a</sup>	NC	OS	HRT	aOR (95%CI) <sup>a</sup>	aOR (95%CI) <sup>a</sup>
	(N=211)	(N=32)	(N=180)			(N=1280)	(N=240)	(N=1054)		
	No. (%)	No. (%)	No. (%)	OS vs.NC	HRT vs. NC	No. (%)	No. (%)	No. (%)	OS vs.NC	HRT vs. NC
<b>Gestational diabetes mellitus</b>										
No	194 (91.94)	28 (87.50)	163 (90.56)	Reference	Reference	1157 (90.39)	209 (87.08)	947 (89.85)	Reference	Reference
Yes	17 (8.06)	4 (12.50)	17 (9.44)	2.02 (0.59-6.90)	1.49 (0.71-3.15)	123 (9.61)	31 (12.92)	107 (10.15)	1.41 (0.92-2.16)	1.04 (0.78-1.38)
<b>Hypertensive disorder</b>										
No	190 (90.05)	30 (93.75)	155 (86.11)	Reference	Reference	1111 (86.80)	186 (77.50)	843 (79.98)	Reference	Reference
Gestational hypertension	9 (4.27)	0 (0.00)	13 (7.22)	NA	1.77 (0.71-4.44)	82 (6.41)	20 (8.33)	77 (7.31)	1.48 (0.88-2.49)	1.26 (0.90-1.76)
Preeclampsia	12 (5.69)	2 (6.25)	12 (6.67)	1.20 (0.25-5.79)	1.32 (0.56-3.10)	87 (6.80)	34 (14.17)	134 (12.71)	2.37 (1.54-3.65)	1.99 (1.48-2.67)
<b>Intrahepatic cholestasis of pregnancy</b>										
No	204 (96.68)	32 (100.00)	173 (96.11)	Reference	Reference	1229 (96.02)	221 (92.08)	979 (92.88)	Reference	Reference
Yes	7 (3.32)	0 (0.00)	7 (3.89)	NA	1.24 (0.40-3.85)	51 (3.98)	19 (7.92)	75 (7.12)	2.35 (1.35-4.10)	1.94 (1.33-2.84)
<b>Meconium staining of the amniotic fluid</b>										
No	175 (82.94)	26 (81.25)	150 (83.33)	Reference	Reference	1099 (85.86)	199 (82.92)	862 (81.78)	Reference	Reference
Yes	36 (17.06)	6 (18.75)	30 (16.67)	1.30 (0.49-3.48)	0.97 (0.56-1.69)	181 (14.14)	41 (17.08)	192 (18.22)	1.29 (0.89-1.88)	1.38 (1.10-1.74)
<b>Preterm birth</b>										
No	199 (94.31)	30 (93.75)	164 (91.11)	Reference	Reference	1111 (86.80)	221 (92.08)	900 (85.39)	Reference	Reference
Preterm	12 (5.69)	2 (6.25)	16 (8.89)	1.00 (0.21-4.84)	1.28 (0.55-2.98)	169 (13.20)	19 (7.92)	154 (14.61)	0.60 (0.37-1.00)	1.21 (0.94-1.54)
<b>Mode of delivery</b>										
Vaginal	103 (48.82)	15 (46.88)	58 (32.22)	Reference	Reference	562 (43.91)	94 (39.17)	422 (40.04)	Reference	Reference
Cesarean section	108 (51.18)	17 (53.13)	122 (67.78)	1.03 (0.48-2.21)	2.05 (1.33-3.15)	718 (56.09)	146 (60.83)	632 (59.96)	1.16 (0.87-1.54)	1.14 (0.96-1.35)

FET, frozen embryo transfer; NC, natural cycles; OS, ovarian stimulation; HRT, hormonal replacement therapy; aOR, adjusted odds ratio; CI, confidence interval.

aOR was adjusted for age at oocyte retrieval, age at embryo transfer, BMI and cause of infertility.

**Table S2 Outcomes of singletons born following FET with different endometrial preparation protocols stratified according to the number of embryo transfer**

	Single embryo transfer					Double embryo transfer				
	NC	OS	HRT	aOR (95%CI) <sup>a</sup>	aOR (95%CI) <sup>a</sup>	NC	OS	HRT	aOR (95%CI) <sup>a</sup>	aOR (95%CI) <sup>a</sup>
	(N=211)	(N=32)	(N=180)			(N=1280)	(N=240)	(N=1054)		
	No. (%)	No. (%)	No. (%)	OS vs.NC	HRT vs. NC	No. (%)	No. (%)	No. (%)	OS vs.NC	HRT vs. NC
<b>Gender</b>										
Male	101 (47.87)	18 (56.25)	86 (47.78)	Reference	Reference	632 (49.38)	131 (54.58)	539 (51.14)	Reference	Reference
Female	110 (52.13)	14 (43.75)	94 (52.22)	0.74 (0.34-1.61)	0.97 (0.64-1.47)	648 (50.63)	109 (45.42)	515 (48.86)	0.82 (0.62-1.08)	0.93 (0.78-1.10)
<b>Birthweight</b>										
<2500 g	4 (1.90)	2 (6.25)	8 (4.44)	3.61 (0.60-21.50)	3.30 (0.43-14.78)	64 (5.00)	21 (8.75)	104 (9.87)	1.61 (0.94-2.76)	1.88 (1.33-2.65)
2500-4000g	191 (90.52)	26 (81.25)	158 (87.78)	Reference	Reference	1128 (88.13)	200 (83.33)	873 (82.83)	Reference	Reference
>4000 g	16 (7.58)	4 (12.50)	14 (7.78)	1.80 (0.54-6.05)	1.00 (0.45-2.24)	88 (6.88)	19 (7.92)	77 (7.31)	1.09 (0.65-1.85)	1.01 (0.73-1.41)
<b>Birthweight for gestational age</b>										
SGA	16 (7.58)	7 (21.88)	13 (7.22)	4.05 (1.43-12.59)	0.95 (0.44-2.09)	88 (6.88)	25 (10.42)	113 (10.72)	1.35 (1.01-2.19)	1.22 (1.08-1.97)
AGA	152 (72.04)	19 (59.38)	136 (75.56)	Reference	Reference	885 (69.14)	170 (70.83)	721 (68.41)	Reference	Reference
LGA	43 (20.38)	6 (18.75)	31 (17.22)	1.22 (0.45-3.32)	0.77 (0.45-1.32)	307 (23.98)	45 (18.75)	220 (20.87)	0.71 (0.49-1.01)	0.82 (0.66-1.01)

NC, natural cycles; OS, ovarian stimulation; HRT, hormonal replacement therapy; aOR, adjusted odds ratio; CI, confidence interval; NA, not accessible; AGA, appropriate for gestational age; SGA, small for gestational age; LGA, large for gestational age.

<sup>a</sup>aOR was adjusted for age at oocyte retrieval, age at embryo transfer, BMI, cause of infertility, gestational hypertensive disorder, intrahepatic cholestasis of pregnancy, and meconium staining of the amniotic fluid.

**Table S3 Interactive effect of number of FET with different endometrial preparation protocols on pregnancy-related complications of singleton deliveries following FET**

	OS vs. NC		HRT vs. NC	
	aOR (95%CI) <sup>a</sup>	<i>P</i> for interaction	aOR (95%CI) <sup>a</sup>	<i>P</i> for interaction
<b>Gestational diabetes mellitus</b>				
No	Reference		Reference	
Yes	1.22 (0.99-1.50)	0.057	1.04 (0.91-1.19)	0.582
<b>Hypertensive disorder</b>				
No	Reference		Reference	
Gestational hypertension	1.20 (0.93-1.56)	0.159	1.16 (0.98-1.36)	0.081
Preeclampsia	1.58 (1.28-1.95)	<0.001	1.45 (1.26-1.67)	<0.001
<b>Intrahepatic cholestasis of pregnancy</b>				
No	Reference		Reference	
Yes	1.55 (1.17-2.04)	0.002	1.42 (1.19-1.71)	<0.001
<b>Meconium staining of the amniotic fluid</b>				
No	Reference		Reference	
Yes	1.11 (0.92-1.33)	0.271	1.15 (1.04-1.29)	0.009
<b>Preterm birth</b>				
No	Reference		Reference	
Preterm	0.80 (0.62-1.03)	0.079	1.13 (0.99-1.27)	0.053
<b>Mode of delivery</b>				
Vaginal	Reference		Reference	
Cesarean section	1.08 (0.94-1.24)	0.302	1.09 (1.00-1.19)	0.091

FET, frozen embryo transfer; NC, natural cycles; OS, ovarian stimulation; HRT, hormonal replacement therapy; aOR, adjusted odds ratio; CI, confidence interval.

a aOR was adjusted for age at oocyte retrieval, age at embryo transfer, BMI and cause of infertility.

**Table S4 Interactive effect of number of FET with different endometrial preparation protocols on outcomes of singletons born following FET**

	OS vs. NC		HRT vs. NC	
	aOR (95%CI) <sup>a</sup>	<i>P</i> for interaction	aOR (95%CI) <sup>a</sup>	<i>P</i> for interaction
<b>Gender</b>				
Male	Reference		Reference	
Female	0.89 (0.78-1.02)	0.105	0.96 (0.88-1.04)	0.317
<b>Birthweight</b>				
<2500 g	1.32 (1.01-1.73)	0.038	1.45 (1.22-1.72)	<0.001
2500-4000g	Reference		Reference	
>4000 g	1.07 (0.83-1.37)	0.619	0.99 (0.85-1.17)	0.947
<b>Birthweight for gestational age</b>				
SGA	1.19 (0.73-1.04)	0.080	1.15 (1.00-1.33)	0.012
AGA	Reference		Reference	
LGA	0.87 (0.73-1.04)	0.093	0.92 (0.83-1.02)	0.085

FET, frozen embryo transfer; NC, natural cycles; OS, ovarian stimulation; HRT, hormonal replacement therapy; aOR, adjusted odds ratio; CI, confidence interval; NA, not accessible; AGA, appropriate for gestational age; SGA, small for gestational age; LGA, large for gestational age.

<sup>a</sup> aOR was adjusted for age at oocyte retrieval, age at embryo transfer, BMI, cause of infertility, gestational hypertensive disorder, intrahepatic cholestasis of pregnancy, and meconium staining of the amniotic fluid.