

Table S1 LBR within each FET cycle and CLBRs across all FET cycles, stratified by positive predictors in multivariable discrete time logistic regression model

Cycle no.	No. of cycles	No. of live births	LBR within each cycle, % (95% CI)	CLBRs across all FET cycles, % (95% CI)	
				Optimal estimate ^a	Conservative estimate ^b
EMT ≤8 mm					
1	219	60	27.40 (21.60, 33.81)	27.40 (21.6, 33.81)	27.4 (21.6, 33.81)
2	56	13	23.21 (12.98, 36.42)	44.25 (37.56, 51.1)	33.33 (27.13, 40)
3	13	2	15.38 (1.92, 45.45)	52.83 (45.99, 59.59)	34.25 (27.99, 40.94)
4	2	0	0 (0, 84.19)	52.83 (45.99, 59.59)	34.25 (27.99, 40.94)
EMT >8 mm, ≤12 mm					
1	1,753	640	36.51 (34.25, 38.81)	36.51 (34.25, 38.81)	36.51 (34.25, 38.81)
2	463	160	34.56 (30.23, 39.08)	58.45 (56.1, 60.77)	45.64 (43.28, 48)
3	89	28	31.46 (22.03, 42.17)	71.52 (69.35, 73.63)	47.23 (44.87, 49.6)
4	8	2	25 (3.19, 65.09)	78.64 (76.65, 80.54)	47.35 (44.99, 49.72)
EMT >12 mm					
1	2,383	1,054	44.23 (42.22, 46.25)	44.23 (42.22, 46.25)	44.23 (42.22, 46.25)
2	560	241	43.04 (38.89, 47.25)	68.23 (66.32, 70.1)	54.34 (52.32, 56.36)
3	87	38	43.68 (33.06, 54.74)	82.11 (80.51, 83.63)	55.94 (53.92, 57.94)
4	11	4	36.36 (10.93, 69.21)	88.61 (87.27, 89.86)	56.11 (54.09, 58.11)
Women aged ≤30 years					
1	3,287	1,604	48.8 (47.08, 50.52)	48.8 (47.08, 50.52)	48.8 (47.08, 50.52)
2	886	389	43.91 (40.61, 47.25)	71.28 (69.7, 72.82)	60.63 (58.94, 62.31)
3	185	70	37.84 (30.83, 45.25)	82.15 (80.79, 83.44)	62.76 (61.08, 64.42)
4	30	9	30 (14.73, 49.4)	87.5 (86.32, 88.61)	63.04 (61.36, 64.69)
Women aged 31–35 years					
1	2,795	1,139	40.75 (38.92, 42.6)	40.75 (38.92, 42.6)	40.75 (38.92, 42.6)
2	727	255	35.08 (31.6, 38.67)	61.53 (59.7, 63.34)	49.87 (48, 51.75)
3	144	49	34.03 (26.35, 42.38)	74.62 (72.97, 76.23)	51.63 (49.76, 53.5)
4	26	5	19.23 (6.55, 39.35)	79.5 (77.96, 80.99)	51.81 (49.94, 53.67)
Women aged 36–40 years					
1	1,066	292	27.39 (24.73, 30.18)	27.39 (24.73, 30.18)	27.39 (24.73, 30.18)
2	246	73	29.67 (24.04, 35.81)	48.94 (45.9, 51.99)	34.24 (31.39, 37.18)
3	33	4	12.12 (3.4, 28.2)	55.13 (52.08, 58.14)	34.62 (31.76, 37.56)
4	4	0	0 (0, 60.24)	55.13 (52.08, 58.14)	34.62 (31.76, 37.56)
Women aged >40 years					
1	454	31	6.83 (4.69, 9.55)	6.83 (4.69, 9.55)	6.83 (4.69, 9.55)
2	72	7	9.72 (4, 19.01)	15.89 (12.65, 19.58)	8.37 (5.99, 11.31)
3	8	1	12.5 (0.32, 52.65)	26.4 (22.4, 30.71)	8.59 (6.18, 11.56)
4	1	1	100 (2.5, 100)	100 (99.19, 100)	8.81 (6.37, 11.8)
No. of oocytes collected 0–5					
1	2,006	613	30.56 (28.55, 32.63)	30.56 (28.55, 32.63)	30.56 (28.55, 32.63)
2	190	43	22.63 (16.89, 29.25)	46.27 (44.07, 48.49)	32.7 (30.65, 34.8)
3	4	1	25 (0.63, 80.59)	59.71 (57.52, 61.86)	32.75 (30.7, 34.85)
4 ^f	0	0	–	–	–
No. of oocytes collected 6–10					
1	2,320	932	40.17 (38.17, 42.2)	40.17 (38.17, 42.2)	40.17 (38.17, 42.2)
2	642	210	32.71 (29.09, 36.49)	59.74 (57.71, 61.75)	49.22 (47.17, 51.28)
3	93	29	31.18 (21.98, 41.63)	72.3 (70.43, 74.11)	50.47 (48.42, 52.53)
4	5	1	20 (0.51, 71.64)	77.84 (76.09, 79.51)	50.52 (48.46, 52.57)
No. of oocytes collected 11–15					
1	1,572	705	44.85 (42.37, 47.35)	44.85 (42.37, 47.35)	44.85 (42.37, 47.35)
2	519	210	40.46 (36.21, 44.83)	67.16 (64.78, 69.48)	58.21 (55.72, 60.66)
3	114	31	27.19 (19.28, 36.33)	76.09 (73.9, 78.18)	60.18 (57.71, 62.61)
4	23	6	26.09 (10.23, 48.41)	82.33 (80.35, 84.18)	60.56 (58.09, 62.99)

Table S1 (continued)

Table S1 (continued)

Cycle no.	No. of cycles	No. of live births	LBR within each cycle, % (95% CI)	CLBRs across all FET cycles, % (95% CI)	
				Optimal estimate ^a	Conservative estimate ^b
No. of oocytes collected 16–20					
1	926	439	47.41 (44.15, 50.68)	47.41 (44.15, 50.68)	47.41 (44.15, 50.68)
2	319	129	40.44 (35.01, 46.05)	68.68 (65.58, 71.65)	61.34 (58.12, 64.49)
3	91	33	36.26 (26.44, 47.01)	80.04 (77.31, 82.56)	64.9 (61.73, 67.98)
4	19	3	15.79 (3.38, 39.58)	83.19 (80.62, 85.54)	65.23 (62.06, 68.3)
No. of oocytes collected >20					
1	778	377	48.46 (44.89, 52.03)	48.46 (44.89, 52.03)	48.46 (44.89, 52.03)
2	261	132	50.57 (44.34, 56.8)	74.53 (71.31, 77.55)	65.42 (61.96, 68.77)
3	68	30	44.12 (32.08, 56.68)	85.76 (83.11, 88.14)	69.28 (65.91, 72.51)
4	14	5	35.71 (12.76, 64.86)	90.85 (88.6, 92.78)	69.92 (66.56, 73.13)
No. of previous IVF failures 0–1					
1	5,118	2,363	46.17 (44.8, 47.55)	46.17 (44.8, 47.55)	46.17 (44.8, 47.55)
2	999	365	36.54 (33.54, 39.61)	65.84 (64.52, 67.14)	53.3 (51.92, 54.68)
3	166	60	36.14 (28.84, 43.95)	78.19 (77.03, 79.31)	54.47 (53.1, 55.85)
4	24	8	33.33 (15.63, 55.32)	85.46 (84.46, 86.41)	54.63 (53.25, 56)
No. of previous IVF failures >1					
1	2,484	703	28.3 (26.54, 30.12)	28.3 (26.54, 30.12)	28.3 (26.54, 30.12)
2	932	359	38.52 (35.38, 41.73)	55.92 (53.94, 57.88)	42.75 (40.8, 44.73)
3	204	64	31.37 (25.07, 38.22)	69.75 (67.9, 71.55)	45.33 (43.36, 47.31)
4	37	7	18.92 (7.96, 35.16)	75.47 (73.73, 77.15)	45.61 (43.64, 47.59)
No. of cleavage-stage embryos frozen <4					
1	4,112	1,464	35.6 (34.14, 37.09)	35.6 (34.14, 37.09)	35.6 (34.14, 37.09)
2	564	186	32.98 (29.11, 37.03)	56.84 (55.31, 58.36)	40.13 (38.62, 41.64)
3	28	10	35.71 (18.64, 55.93)	72.25 (70.86, 73.62)	40.37 (38.87, 41.89)
4	2	0	0 (0, 84.19)	72.25 (70.86, 73.62)	40.37 (38.87, 41.89)
No. of cleavage-stage embryos frozen ≥4					
1	3,490	1,602	45.9 (44.24, 47.57)	45.9 (44.24, 47.57)	45.9 (44.24, 47.57)
2	1,367	538	39.36 (36.76, 42)	67.19 (65.61, 68.75)	61.32 (59.68, 62.94)
3	342	114	33.33 (28.35, 38.6)	78.13 (76.72, 79.49)	64.58 (62.97, 66.17)
4	59	15	25.42 (14.98, 38.44)	83.69 (82.42, 84.9)	65.01 (63.41, 66.6)
No. of blastocyst-stage embryos frozen 0–1					
1	4,388	1,569	35.76 (34.34, 37.2)	35.76 (34.34, 37.2)	35.76 (34.34, 37.2)
2	867	283	32.64 (29.53, 35.88)	56.73 (55.25, 58.2)	42.21 (40.74, 43.68)
3	118	29	24.58 (17.12, 33.35)	67.36 (65.95, 68.75)	42.87 (41.4, 44.35)
4	19	5	26.32 (9.15, 51.2)	75.95 (74.66, 77.21)	42.98 (41.51, 44.46)
No. of blastocyst-stage embryos frozen >1					
1	3,214	1,497	46.58 (44.84, 48.32)	46.58 (44.84, 48.32)	46.58 (44.84, 48.32)
2	1,064	441	41.45 (38.47, 44.47)	68.72 (67.08, 70.32)	60.3 (58.58, 62)
3	252	95	37.7 (31.69, 44)	80.51 (79.1, 81.87)	63.25 (61.56, 64.92)
4	42	10	23.81 (12.05, 39.45)	85.15 (83.88, 86.36)	63.57 (61.87, 65.23)
Duration of infertility ≤4.5 years					
1	5,503	2,341	42.54 (41.23, 43.86)	42.54 (41.23, 43.86)	42.54 (41.23, 43.86)
2	1,444	569	39.4 (36.87, 41.98)	65.18 (63.91, 66.44)	52.88 (51.55, 54.21)
3	274	92	33.58 (28.01, 39.51)	76.87 (75.74, 77.98)	54.55 (53.23, 55.87)
4	44	12	27.27 (14.96, 42.79)	83.18 (82.17, 84.16)	54.77 (53.44, 56.09)
Duration of infertility >4.5 years					
1	2,099	725	34.54 (32.51, 36.62)	34.54 (32.51, 36.62)	34.54 (32.51, 36.62)
2	487	155	31.83 (27.71, 36.17)	55.37 (53.22, 57.52)	41.92 (39.8, 44.07)
3	96	32	33.33 (24.04, 43.69)	70.25 (68.24, 72.2)	43.45 (41.32, 45.6)
4	17	3	17.65 (3.8, 43.43)	75.5 (73.6, 77.33)	43.59 (41.46, 45.75)

Table S1 (continued)

Table S1 (continued)

Cycle no.	No. of cycles	No. of live births	LBR within each cycle, % (95% CI)	CLBRs across all FET cycles, % (95% CI)	
				Optimal estimate ^a	Conservative estimate ^b
No. of blastocyst transferred 0–1					
1	7,133	2,941	41.23 (40.09, 42.38)	41.23 (40.09, 42.38)	41.23 (40.09, 42.38)
2	1,666	623	37.39 (35.07, 39.77)	63.21 (62.08, 64.33)	49.96 (48.8, 51.13)
3	276	81	29.35 (24.04, 35.1)	74.01 (72.97, 75.02)	51.1 (49.93, 52.27)
4	42	11	26.19 (13.86, 42.04)	80.81 (79.88, 81.72)	51.25 (50.09, 52.42)
No. of blastocyst transferred >1					
1	469	125	26.65 (22.7, 30.9)	26.65 (22.7, 30.9)	26.65 (22.7, 30.9)
2	265	101	38.11 (32.24, 44.26)	54.61 (49.98, 59.18)	48.19 (43.58, 52.82)
3	94	43	45.74 (35.42, 56.34)	75.37 (71.21, 79.21)	57.36 (52.74, 61.88)
4	19	4	21.05 (6.05, 45.57)	80.56 (76.68, 84.04)	58.21 (53.6, 62.72)

^a, it was based on the assumption that women who discontinued treatment would have had the same chance of a pregnancy resulting in a live birth as those who remained in treatment; ^b, it was based on the assumption that none of the women who discontinued treatment would have had a live birth; ^c, there were no subject and no live births for this cycle, hence CIs could not be calculated. LBR, live-birth rate; FET, frozen-thawed embryo transfer; CLBRs, cumulative live birth rates; CI, confidence interval; EMT, endometrial thickness; IVF, in vitro fertilization.

Table S2 The variables recorded before and during IVF/ICSI-FET cycle, with their categories, ORs with CIs and P values for their respective associations with LBR

Parameter	OR	95% CI	P value
Female age (at OPU)			
<31 years (reference)	–	–	–
31–35 years	0.733	(0.659, 0.814)	<0.001
36–40 years	0.427	(0.364, 0.501)	<0.001
>40 years	0.080	(0.054, 0.119)	<0.001
BMI	0.968	(0.952, 0.984)	<0.001
Duration of infertility	0.935	(0.919, 0.951)	<0.001
Infertility etiology			
Tubal	0.915	(0.856, 0.978)	0.009
Anovulatory	1.083	(0.886, 1.324)	0.435
Endometriosis	1.243	(0.978, 1.58)	0.076
Male factor	1.120	(1.013, 1.239)	0.027
Unexplained	0.845	(0.577, 1.239)	0.389
Other causes	0.879	(0.684, 1.13)	0.315
>1 type	1.008	(0.933, 1.089)	0.847
No. of previous IVF failures	0.841	(0.812, 0.87)	<0.001
Total dose of gonadotrophin (at OPU cycle)	1.000	(1.000, 1.000)	0.012
Total duration of stimulation (at OPU cycle)	1.027	(1.005, 1.050)	0.016
OSI (OSI at OPU cycle)	2.169	(1.868, 2.520)	<0.001
No. of oocytes collected			
0–5 (reference)	–	–	–
6–10	1.550	(1.348, 1.783)	<0.001
11–15	1.895	(1.631, 2.201)	<0.001
16–20	1.930	(1.627, 2.289)	<0.001
>20	2.359	(1.974, 2.820)	<0.001
Method of fertilization (IVF reference)	0.908	(0.817, 1.008)	0.071
No. of embryos created	1.050	(1.040, 1.060)	<0.001
No. of embryos frozen			
Cleavage stage	1.103	(1.079, 1.128)	<0.001
Blastocyst stage	1.187	(1.146, 1.229)	<0.001

Table S2 (continued)

Table S2 (continued)

Parameter	OR	95% CI	P value
Type of FET cycles			
Natural cycle (reference)	–	–	–
Induced cycle	1.137	(1.010, 1.280)	0.033
Hormonal substitution cycle	0.858	(0.758, 0.972)	0.016
EMT			
≤8 mm (reference)	–	–	–
>8 mm, ≤12 mm	1.609	(1.152, 2.246)	0.005
>12 mm	2.145	(1.543, 2.983)	<0.001
Endometrial pattern			
Heterogeneous pattern (reference)	–	–	–
Homogeneous pattern	1.144	(1.034, 1.266)	0.009
Trilaminar pattern	1.640	(1.338, 2.010)	<0.001
E ₂ level on transplantation day	1.000	(1.000, 1.000)	0.038
P level on transplantation day	0.999	(0.992, 1.007)	0.838
E ₂ /P on transplantation day	0.999	(0.997, 1.001)	0.145
Storage duration	0.998	(0.997, 0.999)	<0.001
Embryos thawed	1.526	(1.347, 1.729)	<0.001
Damaged thawed embryos	0.803	(0.581, 1.109)	0.183
Female age at ET	0.909	(0.900, 0.918)	<0.001
Embryos transferred			
Cleavage stage	1.019	(0.944, 1.099)	0.636
Blastocyst stage	1.306	(1.182, 1.443)	<0.001
Top quality embryos transferred	1.103	(0.980, 1.241)	0.104
good quality embryos transferred	1.030	(0.963, 1.101)	0.394
Moderate quality embryos transferred	1.207	(1.092, 1.334)	<0.001
Poor quality embryos transferred	0.889	(0.708, 1.115)	0.308

OSI = log (number of oocytes collected ×1,000/total dose of gonadotropin). OSI is a composite variable to measure ovarian response. IVF, in vitro fertilization; ICSI, intracytoplasmic sperm injection; FET, frozen-thawed embryo transfer; ORs, odds ratios; CIs, confidence intervals; OPU, ovum pick-up; BMI, body mass index; OSI, ovarian sensitivity index; EMT, endometrial thickness; E₂, estradiol; P, progesterone; ET, embryo transfer.