

Figure 1: Flowchart showing the number of patients in each stage of the study - CONSORT

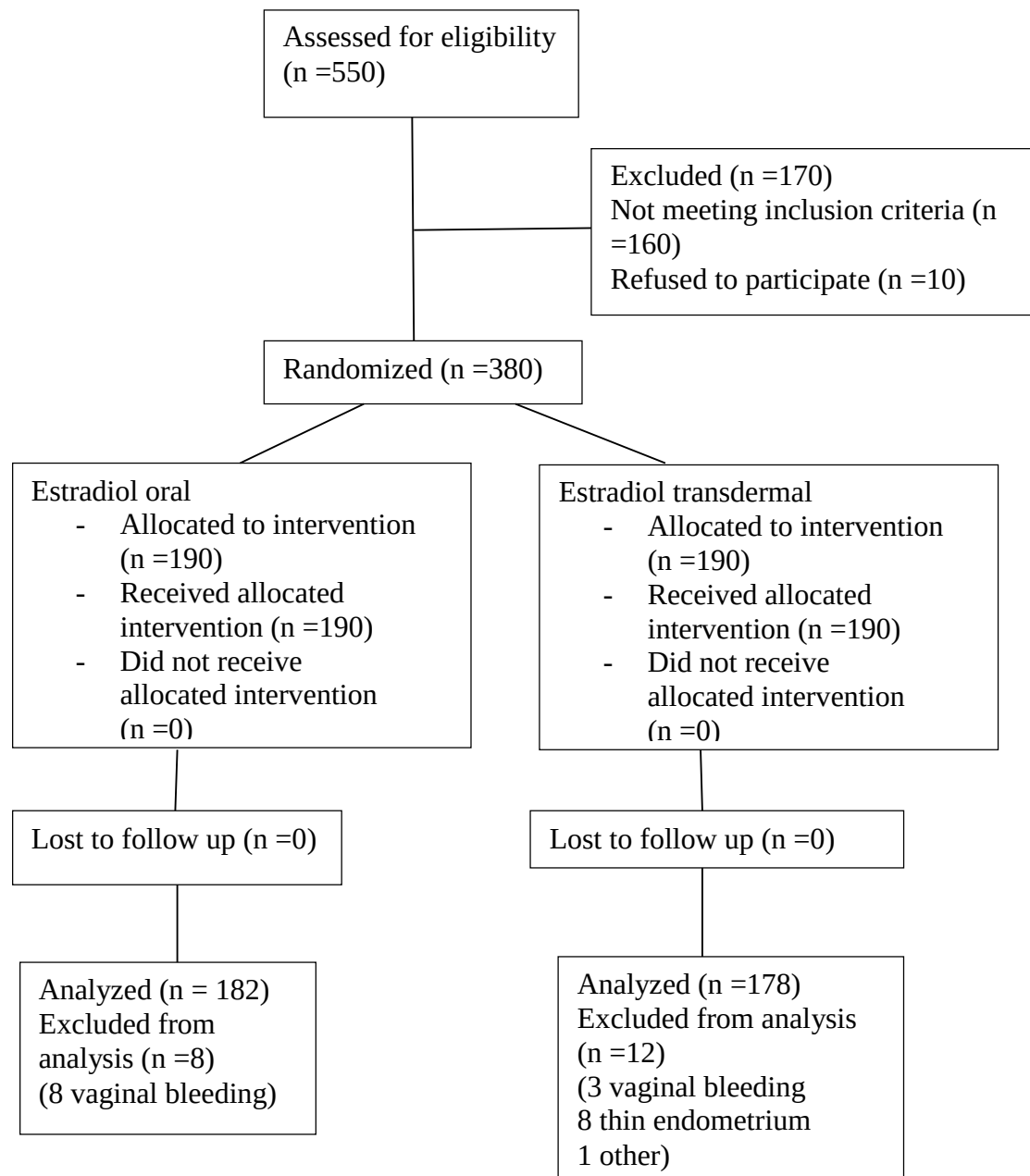


Table 1. Background characteristics of patients by intervention groups

Characteristics	Intervention groups			p
	Total (n=360) n (%)	Estradiol oral (n=182) n (%)	Estradiol gel (n=178) n (%)	
Age (Years)[¥]	32,0 (4,3)	32,3 (4,5)	31,7 (4,1)	0,141
Age groups (years)				0,273 [¢]
<25	9 (2,5)	4 (2,2)	5 (2,8)	
25-34	259 (71,9)	127 (69,8)	132 (74,2)	
35-40	82 (22,8)	43 (23,6)	39 (21,9)	
>40	10 (2,8)	8 (4,4)	2 (1,1)	
Age groups (years)				0,254
>30	217 (60,3)	115 (63,2)	102 (57,3)	
≤30	143 (39,7)	67 (36,8)	76 (42,7)	
Type of infertility				0,563
Primary	215 (59,7)	106 (58,2)	109 (61,2)	
Secondary	145 (40,3)	76 (41,8)	69 (38,8)	
IVF indications				0,362 [¢]
Ovulation disorder	73 (20,3)	37 (20,3)	36 (20,2)	
Tubal	95 (26,4)	48 (26,4)	47 (26,4)	
Male factor infertility	102 (28,3)	46 (25,3)	56 (31,5)	
Unexplained	30 (8,3)	15 (8,2)	15 (8,4)	
Others	58 (16,1)	36 (19,8)	22 (12,4)	
Duration infertility (months)[¥]	53,3 (34,1)	53,4 (34,0)	53,3 (34,4)	0,965
Duration infertility (years)[¥]	4,4 (2,8)	4,5 (2,8)	4,4 (2,9)	0,965
Duration infertility (years)				0,395
≤1	32 (8,9)	13 (7,1)	19 (10,7)	
>1-<5	192 (53,3)	102 (56,0)	90 (50,6)	
≥5	136 (37,8)	67 (36,8)	69 (38,8)	
BMI[¥]	22,1 (3,1)	22,2 (3,2)	22,1 (3,1)	0,794
BMI group				0,713
<18.5	24 (6,7)	14 (7,7)	10 (5,6)	
18.5-<23	222 (61,7)	110 (60,4)	112 (62,9)	
>23	114 (31,7)	58 (31,9)	56 (31,5)	

[¥]Mean &SD[¢] Fisher 's exact test

Table 2. Cycle characteristics of patients by intervention groups

Cycle characteristics	Intervention groups			p
	Total (n=360) n (%)	Estradiol oral (n=182) n (%)	Estradiol gel (n=178) n (%)	
Total amount of drugs use estradiol[¥]	19,4 (2,3)	19,4 (2,2)	19,5 (2,4)	0,821
Total amount of drugs use estradiol[¥]	63,5 (20,8)	63,0 (20,5)	64,0 (21,2)	0,670
Serum Estradiol on progesterone day (pg/ml)[§]	232,5 (155,5 - 315,0)	270,5 (197,0 - 394,0)	186,5 (126,0 - 258,0)	<0,001
Endometrium thickness[¥]	10,5 (1,2)	10,5 (1,1)	10,6 (1,3)	0,850
Endometrium thickness on 7th day of cycle[¥]	7,3 (6,8 - 8,0)	8,0 (7,2 - 8,1)	7,0 (6,3 - 7,5)	<0,001
Type of embryos				
Cleavage embryo	34 (9,4)	21 (11,5)	13 (7,3)	0,170
Blastocyst	326 (90,6)	161 (88,5)	165 (92,7)	
Number of embryos transfer				
1	309 (85,8)	156 (85,7)	153 (86,0)	0,999 ^c
≥2	50 (13,9)	25 (13,7)	25 (14,0)	
Number of excellent embryos transfer				
0	92 (25,6)	41 (22,5)	51 (28,7)	0,418 ^c
1	265 (73,6)	139 (76,4)	126 (70,8)	
2	3 (0,8)	2 (1,1)	1 (0,6)	
Number of good embryos transfer				
0	266 (73,9)	139 (76,4)	127 (71,3)	0,388 ^c
1	90 (25,0)	42 (23,1)	48 (27,0)	
2	4 (1,1)	1 (0,5)	3 (1,7)	
Number of average embryos transfer				
0	316 (87,8)	161 (88,5)	155 (87,1)	0,853 ^c
1	41 (11,4)	20 (11,0)	21 (11,8)	
2	3 (0,8)	1 (0,5)	2 (1,1)	

[¥]Mean & SD[§]Median and interquartile range^c Fisher's exact test

Table 3. Outcome measures of cycles of patients by intervention groups

Outcome	Intervention groups			P
	Total (n=360) n (%)	Estradiol oral (n=182) n (%)	Estradiol gel (n=178) n (%)	
Pregnancy rate (positive HCG)				
positive	204 (56,7)	99 (54,4)	105 (59,0)	0,379
negative	156 (43,3)	83 (45,6)	73 (41,0)	
Clinical pregnancy rate (n = 208)				
positive	195 (93,8)	95 (95,0)	100 (92,6)	0,474
negative	13 (6,3)	5 (5,0)	8 (7,4)	
Ectopic pregnancy (n = 208)				
positive	4 (1,9)	2 (2,0)	2 (1,9)	0,999 [‡]
negative	204 (98,1)	98 (98,0)	106 (98,1)	
Ongoing pregnancy rate (n = 208)				
positive	178 (85,6)	86 (86,0)	92 (85,2)	0,867
negative	30 (14,4)	14 (14,0)	16 (14,8)	
Miscarriage rate (n = 208)				
positive	33 (15,9)	18 (18,0)	15 (13,9)	0,417
negative	175 (84,1)	82 (82,0)	93 (86,1)	

[‡] Fisher's exact test

Table 4: Side effects of patients by intervention groups

	Intervention groups			p
	Total (n=360) n (%)	Estradiol oral (n=182) n (%)	Estradiol gel (n=178) n (%)	
Side effects				
Yes	55 (15,3)	37 (20,3)	18 (10,1)	0,007
No	305 (84,7)	145 (79,7)	160 (89,9)	
Side effects				
No	305 (84,7)	145 (79,7)	160 (89,9)	<0,001[‡]
Headache	11 (3,1)	10 (5,5)	1 (0,6)	
Nausea	6 (1,7)	5 (2,7)	1 (0,6)	
Epigastric pain	22 (6,1)	18 (9,9)	4 (2,2)	
Itchy skin	12 (3,3)	0 (0)	12 (6,7)	
Hot flashes	4 (1,1)	4 (2,2)	0 (0)	

[‡] Fisher's exact test