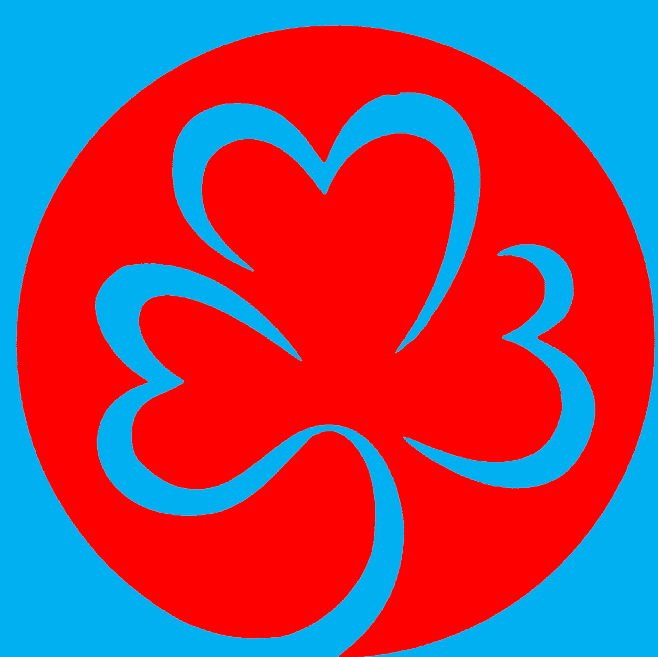




A randomised trial of GnRH agonist in natural cycle frozen embryo transfer

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Background

The effects of gonadotrophin-releasing hormone agonist (GnRH-a) administered in the luteal phase remains controversial.

The use of GnRH-a in the luteal phase has not been studied in frozen embryo transfer (FET) cycles.

Objective

To evaluate the efficacy of the GnRH agonist used for luteal phase support in natural or letrozole cycle FET.

Study design

Double blinded randomised trial of infertile women undergoing FET

Methodology

Selection criteria

- ❑ Women aged <43 years at the time of IVF
- ❑ Replacing early cleavage embryos or blastocysts
- ❑ FET in natural or letrozole cycles

On the day of FET, recruited women were randomly assigned according to a computer-generated randomization list into one of the two groups:

1. decapeptyl 0.1 mg subcutaneously and
2. normal saline as control group

The primary outcome

- ❖ the live birth rate

Sample size calculation

- The average live birth rate: 30% per FET
- Taking an increase of live birth rate from 30% to 40% and the loss to follow up is 10%, the sample size required 392 participants in each group for a two-sided alpha of 0.05 and 80% power.

Analysis by an intention to treat

Results

FET was canceled in 5 women in the agonist group and 4 women in the control group because of lysis of embryos on thawing and no more frozen embryos.

No differences between the two groups in the demographic data, the index stimulated IVF cycle and the characteristics of FET cycles.

No significant difference in the live birth rate between the agonist group and the control group.

Conclusion

The live birth rate of FET in natural or letrozole cycles was similar in women receiving one dose of the GnRH agonist on the day of FET or normal saline as placebo.

	Agonist group (n=392)	Placebo group (n = 392)	P value
Age of women at FET (years)	37 (34 – 39)	37 (35 – 39)	0.232
Endometrial preparation (%)			0.313
Natural cycle	293 (74.7%)	306 (78.1%)	
Letrozole cycle	99 (25.3%)	86 (21.9%)	
Peak serum estradiol level (pmol/L)	970 (695 – 1299)	985 (750 – 1238)	0.590
Endometrial thickness (mm)	8.1 (7.2 – 9.4)	8.1 (7.1 – 9.4)	0.921
Stage of embryo replaced (%)			0.900
No transfer	5 (1.3%)	4 (1.0%)	
Cleavage stage (day 2/3)	151 (38.5%)	155 (39.6%)	
Blastocyst	236 (60.2%)	232 (59.3%)	
Number of embryos/blastocysts transferred (%)			1.000
Zero	5 (1.3%)	4 (1.0%)	
One	386 (98.5%)	385 (98.5%)	
Two	1 (0.3%)	2 (0.5%)	

	Agonist group (n=392)	Placebo group (n = 392)	P value	Relative risk (95% CI)
Positive pregnancy test	169 (43.1%)	170 (43.4%)	1.000	0.994 (0.847 – 1.167)
Clinical pregnancy	165 (42.1%)	161 (41.1%)	0.828	1.025 (0.868 – 1.210)
Ongoing pregnancy	138 (35.2%)	132 (33.7%)	0.707	1.045 (0.862 – 1.268)
Live birth	135 (34.4%)	131 (33.4%)	0.821	1.031 (0.848 – 1.253)
Miscarriage	29 (17.2%)	36 (21.2%)	0.408	0.810 (0.522 – 1.259)
Clinical miscarriage	25/169 (14.8%)	27/170 (15.9%)	0.880	0.931 (0.565 – 1.537)
Ectopic pregnancy	2/169 (1.2%)	2/170 (1.2%)	1.000	1.006 (0.143 – 7.059)
Number of fetuses			1.000	1.000 (0.205 – 4.885)
• Singleton	168 (98.2%)	168 (98.2%)		
• Twin	3 (1.8%)	3 (1.8%)		