

1. Introduction

For patients who have IVF treatment following GnRH antagonist protocol, options to minimise risk of Ovarian hyper-stimulation syndrome (OHSS) include, I) to withhold gonadotropin until serum Oestradiol drops to a safe level before HCG trigger (Coasting) or II) administer GnRH agonist for final follicular maturation, freeze all embryos & replace in a subsequent FET cycle.

2. Study Design / Method

- Retrospective cohort study of patients at risk of OHSS, (>20 follicles / Oestradiol levels >15000pmol/l) during ovarian stimulation.
- Two study groups: Group I; (coasted group) who had HCG trigger and fresh embryo transfer and Group II who had GnRH-a trigger with embryo cryopreservation for FET.
- Primary outcome measure: clinical pregnancy rate of fresh cycle (for Group 1) against first FET cycle (Group II).
- Secondary outcome measures: number of oocytes, number of metaphase II oocytes, number of embryos cryopreserved and incidence of OHSS.

4. Conclusions

- The strategy of ‘agonist trigger and elective cryopreservation of embryos with subsequent FET was associated with better clinical outcome, compared to fresh embryo transfer following a period of coasting.
- There is the issue of extra cost of FET, in addition to the disappointment associated with postponing embryo transfer.
- Extra cost of FET can be justified by better clinical outcomes including avoidance of OHSS; a compelling basis for NHS clinical commissioners to fund frozen embryo transfer treatment.
- Study design and small sample size (n=38) are important limitations.

3. Results

	Group 1 (n=19)	Group 2 (n=19)	p value
Age	36.32 ± 4.2	36.1 ± 0.9	0.83
BMI	23.4 ± 3.2	23.1 ± 4.0	0.81
No of eggs	11.31 ± 6.5	18.21 ± 9.5	< 0.05
No of MII	10.06 ± 5.3	16.37 ± 8.3	< 0.05
Fertilization rate (%)	69.84 ± 18.4	68.07 ± 15.0	0.88
Frozen embryo nos	2.05 ± 2.29	5.68 ± 3.87	< 0.01
Blastocyst formation rate (%)	47.43 ± 34.1	57.94 ± 18.7	0.25
Clinical pregnancy rate	52% (10/19)	84% (16/19)	< 0.05*
Severe OHSS	Nil	Nil	
Late Onset OHSS	15.78 (3/19)	Nil	

* 2-sample z-test, and rest is unpaired t test

- There was no difference in fertilization and blastocyst formation rate between the groups.
- Considering only the first FET cycle; women in group II had a significantly higher clinical pregnancy rate, compared to those in Group I
- There were no cases of severe OHSS in either group. 3 women in Group I developed late onset moderate OHSS.

- Both groups were similar in age and BMI.
- Group II had significantly more oocytes, more number of mature oocytes and more number of frozen embryos, compared to Group I.