RELATIONSHIP BETWEEN SERUM PROGESTERONE LEVEL ON DAY OF THAWED EMBRYO TRANSFER AND PREGNANCY RATE

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INTRODUCTION

Embryo cryopreservation and frozen-thawed embryo transfer refers to the procedures whereby embryos are cryopreserved for storage, to be thawed and transferred at a later stage after the conclusion of the stimulated cycle. Frozen-thawed embryo transfer has become a routine ART practice and the proportion of frozen-thawed embryo transfer among embryo transfer cycles has increased worldwide. Progesterone plays a vital role in both conception and the maintenance of pregnancy; as such, it has been a central focus of investigation aimed at optimizing hormonal replacement therapy.

The beginning of P administration is critical. Starting too soon could lead to premature luteinization and starting too late could increase uterine contractility, which is negatively related to P quantity and increased uterine contractions on the day of embryo transfer leading to lower implantation rates

Ideally, progesterone (p4) monitoring would be tailored to the administration method; however, given the significant practical difficulties in obtaining endometrial progesterone levels, serum P4 concentrations continue to be the mainstay marker for P4 monitoring.

AIM OF THE WORK

The aim of this work was to investigate whether progesterone (P4) levels on the day of frozen embryo transfer to a hormonally prepared endometrium correlate with pregnancy outcomes.

SUBJECTS AND METHODS

This is prospective cohort study was carried out on 80 infertile women attending Alexandria IVF centers and was gone through thawed embryo transfer after approval of ethics committee and sign informed consent fulfilling the criteria of the study.

After approval of local ethics committee, a written informed consent was taken from each patient and selected patients was subjected to:

- Full history taking.
- General clinical abdominal and pelvic examination.
- Laboratory investigations including serum level of:
  - T3, T4 & TSH.
  - AMH.
  - Prolactin.
- Trans-vaginal ultrasound to examine uterus and ovaries and to exclude presence of any of exclusion criteria.

Embryo transfer:

Embryos will be obtained from intracytoplasmic sperm injection cycles that verified and warmed as previously described on Day 2, Day 3 or at the blastocyst stage.

RESULTS

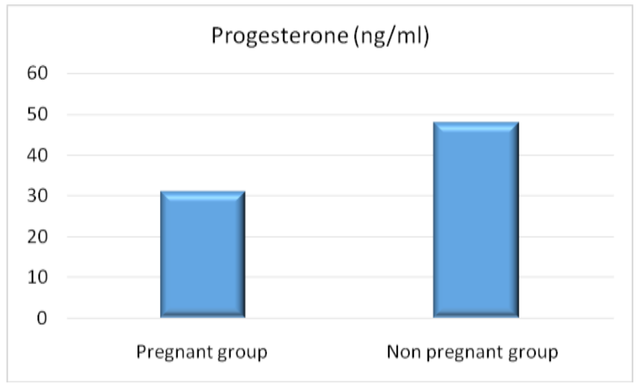

Figure: Comparison between incidence of pregnancy and progesterone

Table 1: Comparison between incidence of pregnancy and progesterone

	Pregnant group "n=45"	Non pregnant group "n=35"	t-test P value
Progesterone (ng/ml)			
Range	3.9-76.5	6.14-94.78	6.85
Mean	31.03	47.81	0.001*
SD	21.81	24.98	

t-test = student t-test p was significant if ≤ 0.05 * Significant difference

Table 2: Comparison between incidence of pregnancy and progesterone category.

Progesterone (ng/ml)	Pregnant group "n=45"		Non pregnant group "n=35"		X^2-test	P value
	No.	%	No.	%		
< 10 (ng/ml)	8	17.8	3	8.6	3.21	0.036*
10-30 ng/ml	19	42.2	7	20.0	6.98	0.002*
>30 ng/ml	18	40.0	25	71.4	5.98	0.007*

CONCLUSION

From the results of this study we can concluded that high serum progesterone (≥ 30 ng/ml) on ET day in HRT–FET cycles significantly reduces the chance of pregnancy following blastocyst transfer.