



EVALUATION OF UTERINE ARTERY PULSATILITY INDEX AND PREGNANCY OUTCOME IN IVF CYCLES-FROZEN EMBRYO TRANSFERS.

Gynaecology

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ABSTRACT

To evaluate the uterine artery pulsatility index and correlate it with pregnancy outcome in frozen transfers.

METHODS: In this study, about 50 women were studied, uterine artery pulsatility index was evaluated after endometrium reached 7 mm on transvaginal scan and progesterone started.

RESULTS: In our study no pregnancies occurred with PI more than 3.

CONCLUSION: Uterine artery PI can be used to determine if embryo transfer can yield a pregnancy. In those with PI more than 3, embryo transfer can be cancelled and postponed.

KEYWORDS

INTRODUCTION:

Implantation window is the time period during which the endometrium and the uterus as a whole is conducive to the implantation of the embryo. (1)

During the different phases of the menstrual cycle, the blood flow to the uterus as a whole undergoes significant changes due to the hormonal influences and this is reflected when we study the uterine and ovarian blood flow using pulsed and color Doppler. It is imperative that we perform embryo transfers in uteri which are in their implantation period to maximize the biochemical pregnancy positive rates.

MATERIALS AND METHODS:

The study was conducted in Apollo Hospital, Chennai on 50 women who were undergoing fresh or frozen embryo transfer. The study was conducted between July 2016 to July 2017. The age of our patients were between 25-39 years.

Fifty women who had been self stimulated and resultant embryos thus formed were frozen were counseled for frozen embryo transfer.

All women were started on oral contraceptive pills on day 14 and on day 21 injection leuprolide 3.75 mg was given. OCP continued and stopped after day 21. After the lady gets her periods, baseline scan was done to confirm down regulation. Estradiol valerate was then started at a dose of 6 mg/day gradually increasing upto 16 mg/day.

Transvaginal sonography was done on the 10 day of period to measure the endometrial thickness. Using color Doppler, in 2D, flow velocity waveforms were determined from main branch of the uterine artery on right and left sides of cervix in a longitudinal plane. The pulsatility index is the systolic peak velocity minus end diastolic velocity divided by mean. The average uterine PI was used. (2,3)

Embryo transfer was done after the required endometrial thickness (7 mm) was reached and progesterone started. A serum beta HCG was done after 15 days. Confirmation of pregnancy was done with a transvaginal scan showing a gestational sac when beta HCG levels reached 1000 units.

RESULTS:

Of the 50 women, there were 29 pregnancies (58%). The average PI in the pregnant group was 1.7. None of the women who had a PI more than 3 conceived.

TABLE DISPLAYING THE COMPARISON OF PI VALUES IN THE PREGNANT AND THE NON PREGNANT GROUP

	AVERAGE	MIN	MAX
PREGNANT	1.7	1.3	2.8
NON PREGNANT	2.5	1	3.4
TOTAL	2.1		

DISCUSSION:

In our study after treatment with estradiol valerate to a maximum dosage of 16 mg/day, women who failed to reach 7 mm endometrial thickness were electively withdrawn from the study. The PI of those women were not assessed. Of the 50 women who developed an endometrial thickness equal to or greater than 7 mm, PI was assessed. The average PI of the uterine artery was higher in those women with negative beta HCG after 15 days. No conception was reported when PI was more than 3. (2,3,4)

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