

بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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Association between Follicular Fluid Estradiol and clinical pregnancy outcome in Intracytoplasmic Sperm Injection Cycles

Thesis

Submitted in Partial Fulfilment of M.D. Degree in Obstetrics & Gynaecology

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List of Abbreviations

Abbreviation : Meaning

AFC : Antral Follicular Count

Alpha FP : Alpha-Fetoprotein

AMH : Anti Mullarian Hormon

ARTs : Artificial Reproductive Technologies

ATII : Angiotensin II

Beta-EP : Beta-endorphin

BMI : Body Mass Index

BMP-15 : Bone Morphogenetic Protein-15

CA125 : Cancer Antigen 125

CEA : Carcino Embryonic Antigen

CES : Cumulative Embryo Score

E2 : Estradiol

EC : Early Cleavage

eNOS (NO) : Nitric Oxide Endothelial Isoform of NO

ESHRE : European Society of Human

Reproduction and Embryology

FF : Follicular Fluid

Fr : fragmentation rate

FSH : Follicle Stimulating Hormone

GES : Graduated Embryo Score

GH : Growth Hormone

GnRH : Gonadotrophin Relasing Hormone

HCY : Homocysteine

Quest of Abbreviations &

HGSOC : High-grade Serous Ovarian Cancer

HMG : Human Menopausal Gonadotropin

ICM : Inner Cell Mass

ICSI : Intra Cytoplasmic Sperm Insemination

IGF : Insulin-Like Growth Factors

IL : Interleukins

IVF : In Vitro Fertilization

IVM : Vitro Maturation

LH : Luteinizing Hormone

MI : Metaphase I

MII : Metaphase II

MS : mass spectrometry

NPBs : Nucleolar Precursor Bodies

O : Other

OCT4 : Ovarian Cancer Subtypes

OHSS : Ovarian Hyperstimulation

OMI : Oocyte Maturation Inhibitor

P4 : Progesterone

PCOS : Poly Cystic Ovary Syndrome

PGD : Preimplantation Genetic Diagnosis

POR : Ovarian Response

PRL : Prolactin

ROC : Receiver-Operating Characteristic

ROS : Reactive Oxygen Species

TAC : Total Antioxidant Capacity

Quelist of Abbreviations &

TE : Trophoectoderm

TESE : Testicular Sperm Extraction

TLM : Time-lapse microscopy

UPLC : Ultra Performance Liquid Chromatography

VEGF : Vascular Endothelial Growth Factor

WHO : World Health Organization

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ABSTRACT

<u>Association between Follicular Fluid Estradiol and clinical</u> pregnancy outcome in Intracytoplasmic Sperm Injection Cycles

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Objective: This study aims to assess the accuracy of follicular fluid Estradiol level in predicting clinical pregnancy outcome, oocyte quality and embryo quality in women undergoing ICSI.

Patients and Methods: The current study was prospective study that included 180 women underwent Intra-cytoplasmic sperm injection (ICSI) procedure using Flexible Antagonist protocol. During oocyte retrieval, follicular fluids of mature follicles (>17 mm) aspirated. Follicular fluid concentrations of 17β-estradiol was determined by ELISA. Upon retrieval, oocytes were analyzed for hallmarks of maturity and classified as GV, MI, or MII based on appearance. Fertilization status observed at 24 h and the nutrient solution renewed, morphology of the dividing embryo was observed and 'embryo grading' done. At least in the two-cell stage embryo transfer were done at third or fifth day after the oocyte collection. Quantitative S.B HCG measured at 14 days post transfer, followed by a vaginal ultrasound 2 weeks later demonstrating an embryonic cardiac pulse.

Results: Our results showed that, the number of retrieved oocytes ranged from (1 to 33 oocytes) mean number 10±7. Follicular fluid E2 concentration ranged from 246±199 (0 to 700) (ng\ ml). Serum E2 concentration ranged from 2361±1583 (100 to 7589) pg\ml. The mean of total number oocytes was 10 with 53% of MII of good quality. And (47%) were of bad quality. All cases had normal fertilization. Number of transferred Embryos ranged from one to three embryos (good quality was of 63.9%), (bad quality was of 36.1) and 103 of cases had embryo transfer on day 5 ,77 had transfer on day 3. Chemical pregnancy was positive in 90 cases (50%) and the clinical pregnancy positive in 66 cases (36.7%). In follicular fluid E2 concentration ranged from 220 to 476 ng\ml that they had clinical pregnancy and ranges from 36 to 320 ng\ml had no clinical pregnancy.

Conclusion: Follicular fluid E2 concentration had fair predictive value in oocyte maturation, embryo quality, chemical and clinical pregnancy. But it was an independent predictor of MII-grading.

Key words: Follicular Fluid Estradiol, clinical pregnancy, Intracytoplasmic Sperm Injection, oocyte quality.