



بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى

مسئولية عن محتوى هذه الرسالة.

ملاحظات: لا يوجد



**GnRH agonist trigger VS HCG trigger for final
oocyte maturation in GnRH antagonist
protocol ICSI cycles:
A Randomized Controlled Study**

Thesis

Submitted for partial fulfillment of Master Degree
in Obstetrics & Gynecology

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Mounir Mohamed Abd El-kader Alam El-Din



To:

My Parents,

My Beloved Wife and My Kids



*For their endless love, support,
and continuous care*

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List of Abbreviations

17-OHP	: 17-hydroxyprogesterone
3 β -HSD	: 3 β -hydroxysteroid dehydrogenase
AFC	: Antral follicle count
AMH	: Anti Mullerian Hormone
ARDS	: Adult respiratory distress syndrome
ART	: Assisted reproduction technologies
ARTs	: Assisted Reproductive Techniques
BBT	: Basal body temperature charting
BMI	: Body Mass Index
CC	: Clomiphene citrate
CDC	: Center for Disease Control
COC	: Cumulus-corona cells Oocyte Complex
COH	: Controlled ovarian stimulation
COS	: Controlled ovarian stimulation
DF	: Dominant ovarian follicle
DIC	: Differential interference contrast
E2	: Oestradiol
EFS	: Follicle Syndrome
ESHRE	: The European Society of Human Reproduction and Embryology
ET	: Embryo transfer
FEFS	: False EFS
FET	: Frozen embryo transfer
FR	: Fertilization rate
FSH	: Follicle-stimulating hormone
GEFS	: Genuine EFS
GIFT	: Gamete intrafallopian transfer
GnRH	: Gonadotropin-releasing hormone
GnRHa	: Gonadotropin-releasing hormone agonists
GV	: Germinal vesicle
hCG	: Human chorionic gonadotropin
HCV-Ab	: Hepatitis c virus antibody

List of Abbreviations (Cont.)

HES	: Hydroxyethyl starch
HIV-ab	: Human immunodeficiency virus antibody
HMC	: Hoffmann modulation contrast
hMGs	: Human menopausal gonadotropins
hp-FSH	: Highly purified FSH
hpi	: 18 h post-insemination
HPO	: Hypothalamic pituitary ovarian
HRT	: Hormonal replacement treatment
HS	: Highly significant
HSG	: Hysterosalpingogram
ICM	: The inner cell mass
ICSI	: Intra-Cytoplasmic Sperm Injection
IGF-1	: Insulin-growth factor-1
IMSI	: Intracytoplasmic morphologically selected sperm injection
IOS	: Immature Oocyte Syndrome
IPB	: Frist Polar Body
IUI	: Intrauterine insemination
IVF	: In vitro fertilization
IVF	: Recommends in-vitro fertilization
LBR	: Live birth rates
LH	: Luteinizing hormone
LUF	: Luteinized unruptured follicle
MESA	: Microsurgical epididymal sperm aspiration
MI	: Metaphase I
MII	: Metaphase II
MIP	: Maximum implantation potential
mRNA	: Messenger Ribonucleic acid
MS	: Meiotic Spindle
MSOME	: Motile sperm organelle morphology examination
NCs	: Natural cycles
NICE	: The National Institute for Health and Care Excellence
NOA	: Non-obstructive azoospermia

List of Abbreviations (Cont.)

NPBs	: Nucleolar precursor bodies
NS	: Non significant
OA	: Obstructive azoospermia
OHSS	: Ovarian hyperstimulation syndrome
OI	: Ovulation induction
OPU	: Ovarian pickup
OR	: Oocyte-Retrieval
OS	: Ovarian stimulation
PCOS	: Polycystic ovarian syndrome
p-FSH	: Purified FSH
PGS	: Preimplantation genetic screening
PN	: The pronuclei
POR	: Poor Ovarian Response
RAS	: Renin-angiotensin system
rFSH	: Recombinant FSH
S	: Significant
SERM	: Selective estrogen receptor modulator
SHBG	: Sex-hormone-binding globulin
STD	: Sexually transmitted disease
STDs	: Sexually transmitted diseases
TE	: Trophectoderm
TET	: Tubal embryo transfer
TSH	: Thyroid-stimulating hormone
UC	: Uterocervical
UI	: Unexplained infertility
US	: Ultrasound
VEGF	: Vascular endothelial growth factor
WHO	: World Health Organization
ZIFT	: Zygote intrafallopian transfer

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Protocol



**PROTOCOL OF A THESIS FOR PARTIAL FULFILMENT OF MASTER DEGREE IN
OBSTETRICS & GYNAECOLOGY**

• **Title of the Protocol:**

**GnRH agonist trigger VS HCG trigger for final
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protocol ICSI cycles.**

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**What is already known on this subject? AND
What does this study add?**

In the last decades, GnRH antagonist has been introduced to the market to be used for pituitary desensitization in IVF/ICSI treatment cycles. GnRH antagonist protocol is shown to be an effective alternative to the standard long GnRH agonist protocol [Check et al., 1993].

The introduction of GnRH antagonist protocol has offered an alternative to HCG-induced ovulation triggering. The administration of GnRH agonist, which induces an endogenous rise in both LH and FSH concentrations, has been shown to effectively induce ovulation [Griesinger et al., 2006, 2007].

In this study, we are assessing the effectiveness of GnRH agonist trigger to reduce OHSS and its effects on oocyte maturation, embryo quality, fertilization and clinical pregnancy rate.

1. INTRODUCTION

In normal menstrual cycle, gonadotropin-releasing hormone (GnRH) is secreted from the mediobasal hypothalamus in the follicular phase of the cycle in a periodic pulse and is discharged into the pituitary portal system and bound to its receptors on gonadotroph cells in the anterior pituitary. Following, low and pulse release of follicular stimulating hormone (FSH) and luteinizing hormone (LH) happens which is necessary for the follicular growth and the ovarian secretion of estrogen. In the midcycle, in the presence of high levels of estrogen and lower levels of progesterone, sudden surge of gonadotropins especially LH takes place, which induces resumption of oocyte meiosis and ovulation after 36-40 hours [Hoff et al., 1983].