Superovulation Treatment using Gonadotrophins
Fertility - Full Clinical Guideline

Reference No.: Fertility/09:22/F6

Contents

1. Introduction

Superovulation therapy is given to patients;

- in conjunction with IUI (intrauterine insemination). An audit of Intrauterine Insemination at the Royal Derby Hospital – Sept 2013 demonstrated an improved pregnancy rate using gonadotrophins.
- with proven resistance to clomiphene citrate and/or letrozole.
- those who have received the maximum recommended number of cycles of ovulation induction, using clomiphene citrate and/or letrozole.

2. Purpose and Outcomes

- To develop a single **or no more than three** mature follicle with individually tailored doses of the gonadotrophins.
- To ensure women who receive gonadotrophin treatment are monitored safely, correctly and advised appropriately.
- To ensure consistent approach, advice and care delivery, whilst taking into account individual response to medication.
- To achieve optimum fertile timing for conception.

3. Abbreviations and Definitions Used

FSH	-	Follicle Stimulating Hormone
HFEA	-	Human Fertilisation and Embryology Authority
HMG	-	Human Menopausal Gonadotrophin
IUI	-	Intrauterine Insemination
LH	-	Luteinising Hormone
OHSS	-	Ovarian Hyperstimulation Syndrome
rFSH	-	recombinant Follicle Stimulation Hormone

Day 1 – First day of full flow menstruation bleeding.

TV Scan – Transvaginal Ultrasound. This is the imaging method of choice to assess follicular development and endometrial thickness, enabling fertile time to be pinpointed. Monitoring avoids overstimulation, allows diagnosis if this occurs and indicates the need for medical intervention.

FEPS - Fertility and Early Pregnancy Scanning.

Superovulation - Follicle-stimulating hormone (FSH) and luteinising hormone (LH) together (human menopausal gonadotrophin [HMG] preparations, e.g. Menopur) or FSH alone (recombinant follicle stimulation hormone gonadotrophin [rFSH] preparations, e.g. Gonal F) are used in the treatment of infertility in women undergoing intrauterine insemination or with proven hypopituitarism or who have not responded to Clomiphene citrate and/or letrozole.

Luteal Progesterone level (P_4) - This is assessed by a blood test sent to the biochemistry laboratory. The luteal phase occurs in the second half of the menstrual cycle after ovulation has occurred. This level peaks approximately seven days after ovulation, so the test should be timed accordingly. The result will indicate that ovulation has occurred. Results of >28mmol/L is positive for ovulation (RDH biochemistry reference range).

4. Key Responsibilities and Duties

Lead Consultant is responsible for identifying patients who require superovulation therapy, indicating what regime the patient is to follow and prescribing this accordingly. To provide supervision of cycle and provide ad hoc review of the regime as required.

Nurse Specialists are responsible for booking patient for commencing cycle, teaching patient to self-inject, booking and performing trans-vaginal scans, taking blood to assess oestrodial level, reviewing results and advising patients of findings and planning next step as table below and liaising with lead consultant as necessary.

5. Process for Managing Superovulation Treatment Using Gonadotrophins

- Prior to commencement of treatment cycle, discuss superovulation with couple, highlighting benefits, risk and alternative treatments. Give patient information leaflet.
- Stress importance of need to attend regularly for scans and reviews.
- If patient amenorrhoeic for >42 days, use progestogen to induce bleed, following a negative pregnancy test. e.g. Provera 10mg OD for 7 days.
- Patient to ring with Day 1 of menstrual cycle.
- Daily injections of gonadotrophins are started between days 3 - 5 of the menstrual cycle.

  The dosage of drugs commonly used:
  - HMG (e.g. Menopur 75 iu)
  - rFSH (e.g. Gonal F 50 iu)
- Monitoring commences after approximately 5 doses of gonadotrophin with trans-vaginal ultrasound scan, to assess follicular growth and endometrial thickness.

Await outcome:

Pregnant:	Arrange viability scan, especially when multiple follicles seen during follicle tracking.
Not pregnant:	Further treatment cycle, if previous cycle superovulation therapy alone, consider adding intrauterine insemination. Review regime as necessary.

Ultrasound findings	Action
No large follicles (follicle>10mm), follicles of <17mm in diameter or endometrial lining of < 7.5mm.	Rescan in 24 - 48 hours. Take Oestradiol level if necessary. Review results and arrange follow up
Consistent scans showing no follicular growth. Beyond Day 21 (longer based on patients regular cycle length).	To be discussed with lead consultant if poor response. Increasing gonadotrophin dose or abandoning cycle of treatment may be recommended.
If > 3 follicles (one of ≥17mm and others ≥14 in diameter).	Abandon cycle. Caution patient on risks of multiple pregnancy and advice against sexual intercourse. Await bleed. Consider baseline scan in subsequent cycle to ensure atresia of follicles.
Follicles of ≥17mm diameter (no more than 3 in total) with endometrial lining of 7.5mm or thicker	Give HCG injection (Ovitrelle 250mcg/Gonasi 5000iu subcutaneous injection) as prescribed. Caution patient on risks of multiple pregnancy if > 1 follicle. Advice on fertile time to enable optimal time for intercourse or arrange intrauterine insemination if appropriate, (see IUI guideline **(F7)**). Luteal Progesterone - blood test determines the quality of that particular cycles' ovulation when taken 7 days post ovulation. Advise patient when result is available (usually 2 days after sampling) and how to contact to obtain the result.

6. Monitoring Compliance and Effectiveness

Monitoring Requirement :	To be reviewed in line with HFEA processes
Monitoring Method:	Superovulation is often performed in conjunction with Intrauterine Insemination (IUI), IUI notes are audited bi-annually. HFEA carries out interim unannounced visits, with a license renewal visit every fourth year of which inspection of IUI notes is performed. DATIX report completed for OHSS requiring hospital admission.
Report Prepared by:	Fertility Nurse Specialist – IUI audit 6 monthly compilation of DATIX reports regarding OHSS
Monitoring Report presented to:	Fertility Unit Quality Meeting.
Frequency of Report	6monthly audit – IUI 3 monthly DATIX compilation of OHSS reports

7. Reference

http://www.labtestsonline.org.uk/

Documentation Control

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	1	May 2008		
	2	May 2012	J Dawson Fertility CNS / Mr Jayaprakasan Consultant	3 Year update due
	3	April 2014	J Dawson Fertility CNS / Mr Jayaprakasan Consultant	Amended & updated
	4	Nov 2015	Fertility Team Mr Jayaprakasan, Consultant	Update
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Business Unit sign off::	12/09/2022: Gynaecology Guidelines Group: Miss B Purwar – Chair (Virtual sign off) 27/09/2022: Gynaecology Development & Governance Committee: Mr J Dasgupta – Chair			
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