

Unexplained infertility

Definition:

fail to ~~be~~ conceive after 1 year of regular unprotected sexual intercourse

+
Normal tests for :-
- ovulation
- tubal
- semen analysis
- uterine
- ovarian reserve

Epidemiology:

Prevalence: 30-40%

Aetiology (Potential contributing factors)

* increased age of female:

* Lifestyle factors:

- smoking ○ -- ovarian reserve
In men ⇒ ○ -- fertilization capacity
of sperm
(-- mitochondrial activity
+ ~~the~~ DNA damage)

○ alter tubal function

○ alter uterine environment

- weight ○ obesity & underweight

○ ↓ quality oocyte
embryo

in men ○ sperm (DNA damage)

○ -- libido

○ erectile dysfunction

- Alcohol : in men \rightarrow sperm quality
- in women \rightarrow luteal phase dysfunction
- \rightarrow abnormal embryo development

* Ovarian reserve

- in young women : difficult oocyte retrieval
- once retrieved \Rightarrow normal preg. rate

* Tubal function

- gonorrhoea and chlamydia \rightarrow tubal function defect
- \rightarrow out occlusion

* Fertilisation defect (gamete)

- subtle defects in oocyte and sperm.
- eg, high DNA fragmentation
- tests for sperm function :
 - * Not recommended as routine investigations.
 - * Example : - DNA fragmentation test
 - Ability to penetrate cervical mucus
 - quantification of sperm-zona binding

* Implantation defect (endometrium)

- * endometrial receptivity markers
- Not routine
- Example : cytokines

* Immunologic, metabolic and genetic factors

- + Immunologic : - antithyroid
- Antinuclear
- anti-ovarian
- APL Ab

- + Genetic : Methylene tetrahydrofolate reductase

- + Metabolic : ++ oxidative stress

* Endometriosis (mild asymptotic)

(M) => see before

(S) => see before

* Fibroid :

Types $\begin{cases} \rightarrow \text{submucous} \\ \rightarrow \text{intramural} \\ \rightarrow \text{subserous} \end{cases}$

* Adenomyosis

* Tubal function : gonorrhoea or chlamydia
↳ tubal function defect without occlusion

Investigations :

(1) Detection of ovulation

- Urinary LH estimation
- Midluteal progesterone
- UIS and folliculometry and follicular rupture

(2) Tubal patency

- HSG
- SIS
- Laparoscopy + chromotubation

(3) Semen analysis

(4) US and SIS

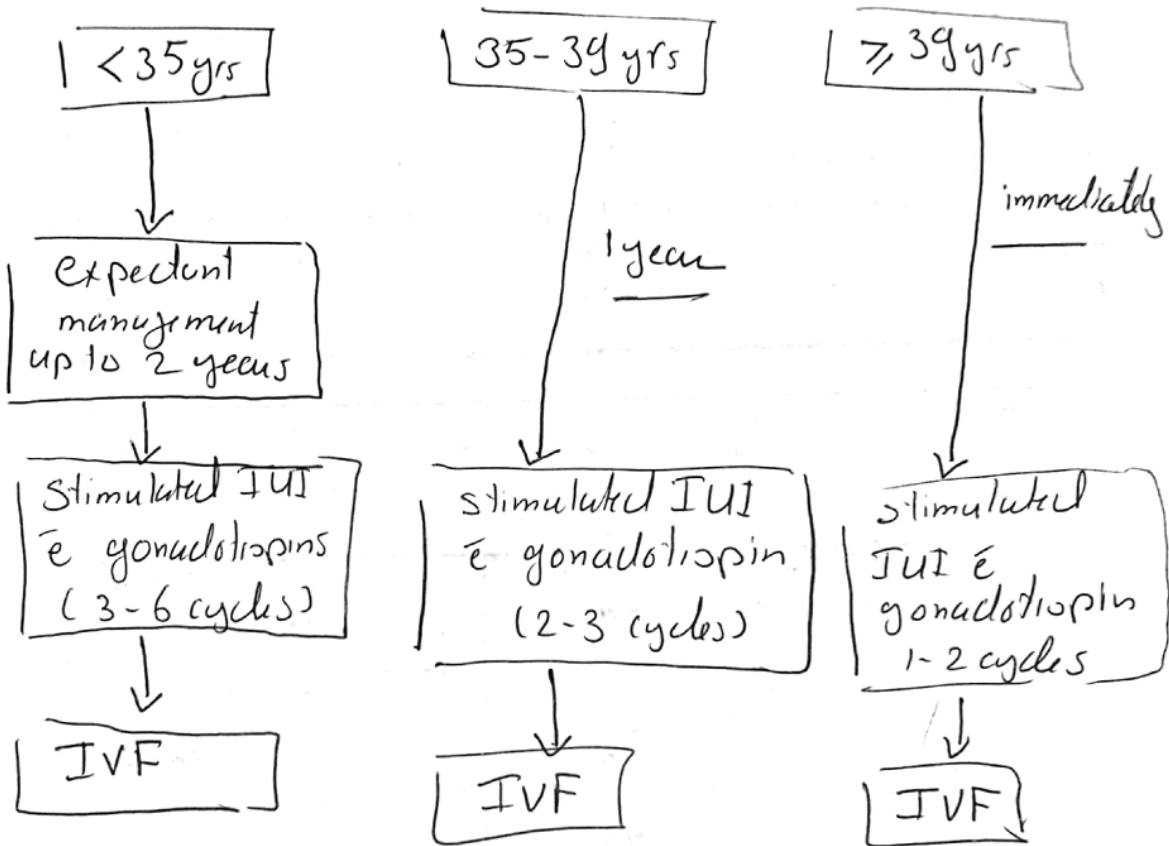
(5) Ovarian reserve test

- FSH
- AMH
- inhibin A
- inhibin B
- AFC
- ovarian volume
- clomiphene citrate challenge test
- FSH exogenous FSH ovarian reserve test

4) - 6. Laparoscopy (In symptomatic)

7) - 7. Hysteroscopy (in known uterine pathology)

Treatment options :



① Expectant management

• 75% conceive spontaneously

② Intrauterine insemination + COH

• NICE guidelines 2013

↳ not routinely offer IUI + COH

↳ offer ~~IUI~~ IVF/ICSI after 2 years.

③ In vitro fertilisation:

IVF

vs

IUI + COH

No difference
in

- cumulative prog rate
- Multiple prog.
- OHSS

30% per cycle

10% per cycle

- Less invasive
- Better perinatal outcomes

IVF

vs

ICSI

ASRM & NICE

- No routine use for ICSI in unexplained infertility

but

- split IVF - ICSI

↳ detection of fertilisation defects

↳ identify couple that would need ICSI in next cycles

↳ Reduces risk of fertilisation failure

Others:

+ Clomiphene citrate

No clinical benefit

* HSG

↳ ++ ~~spontaneous~~ live birth rate

↳ Mechanism:

↳ Mechanical

↳ immunologic (on peritoneum)

↳ effect on endometrium
