Infertility Update

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Infertility

• Inability to conceive after one year of adequate unprotected intercourse (six months if the woman is over age 35)
Time Required for Conception in Couples Who Will Attain Pregnancy

- 1 month: 25%
- 2 months: 45%
- 3 months: 57%
- 6 months: 72%
- 1 Year: 85%
- 2 Year: 93%
- 3 years: 95%
Male Factor: 35%
Tubal Factor: 35%
Ov dysfunction: 20%
Unexplained: 7%
Others: 3%
Anovulatory
Tubal & Pelvic
Unusual factors
Unexplained
• Anovulation
• Tubal Factor
• Male
• Pelvic Factor (Endometriosis, adhesion)
• Unexplained
• Uterine/cervical (fibroid)
10% Others
90% PCOS
Anovulation
Ovulation

- History
- BBT
- LH kits
- Mid luteal phase Progesterone (cycle length – 7)
- Ultrasound
- EMB (day 21-26)
• Anovulation
• Tubal / Pelvic Factor
• Male
• Unexplained
• Uterine/cervical (fibroid)
Tubal & Pelvic Factors

- Tubal disease, PID
- Tubal surgery
- Pelvic adhesions
- Endometriosis
Tubal Factor

- Tubal infertility after PID (12%, 24%, 50%)
- One-half of patients who found to have tubal damage and/or pelvic adhesion have no history of antecedent disease
Tubal Factor

- Hysterosalpingography
- Hysteroscopy / laparoscopy
- Falloscopy
• Anovulation
• Tubal Factor
• Male
• Unexplained
• Uterine/cervical (fibroid)
Male Factor Infertility

- Anatomic defects (hypospadias, Retrograde ejac.)
- Genetics Causes
- Trauma
- Infection
- Endocrine disorders
- Varicocele
Male Factor Infertility

• Vol. > 2 ml, Conc. > 20x10⁶, Mot. >50%, Morph. > 30%.

• Total motile sperm per milliliter (sperm per ml X percent motility) > 10 x 10⁶
Semen Analysis

Sperm Morphology

- Normal Oval Form
- Abnormal Sperm

- Sperm count (number of sperm per cc)
- Motility (percentage of sperm moving)
- Sperm morphology
Male Factor Infertility

• Screening for
  * Cystic fibrosis (Bilateral congenital absence of the vas) (1%-2% of infertile males)
  * Y chromosome microdeletion (7% - 10%)
  * Klinefelter’s syndrome (XXY) (1 in 500)
• Anovulation
• Tubal Factor
• Male
• Uterine/cervical (fibroid)
• Unexplained
**Septate Uterus**
Wedge of fibrous tissue dividing uterine cavity.

**Asherman’s Syndrome**
Adhesions (band-like formations) crossing the lining of the uterus.

**Bicornuate Uterus**
Incomplete uniting of uterus.
- Anovulation
- Tubal Factor
- Male
- Uterine/cervical (fibroid)
- Unexplained
Basic Work Up

- Anovulation
- Male
  - Tubal Factor
  - Uterine/cervical (fibroid)
  - Unexplained

- Day 3 Labs (FSH, Inhibin B, Estradiol)
- Mid luteal phase Progesterone
- Semen analysis
- Hysterosalpingogram
- ??? Laparoscopy
• Anovulation
• Tubal Factor
• Male
• Unexplained
• Uterine/cervical (fibroid)
1. Estrogen
2. FSH
3. Estrogen
4. LH

Positive Feedback

Hypoth / Pituitary
Normal Egg Development

Each month the ovaries release one egg, or ovum.
Induction of Ovulation

1. Estrogen
2. FSH
3. Estrogen
4. LH

Positive Feedback

Hypoth / Pituitary

1. ↓ Estrogen
2. FSH
3. ↑ Estrogen
4. LH

1. Clomid
2. Injection Medications (Gonal-f, Follistim, Repronex)
Induction of Ovulation

• **Clomid**
  80% response, less invasive, cheap
  Low incidence of multiple

• **Injectable**
  Multiple gestation
  Expensive

• **Intrauterine Insemination**
• Anovulation
• Tubal / Pelvic Factor
• Male
• Unexplained
• Uterine/cervical (fibroid)
• Tubal Surgery
• In vitro fertilization (IVF)
Pregnancy Outcome After Tubal Surgery

<table>
<thead>
<tr>
<th>Pregnancy Rate (%)</th>
<th>Mild</th>
<th>Moderate</th>
<th>Sever</th>
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<tr>
<td>Intrauterine</td>
<td>70%</td>
<td>17%</td>
<td>12%</td>
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<tr>
<td>Ectopic</td>
<td>10%</td>
<td>14%</td>
<td>4%</td>
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10 29 56
• Anovulation
• Tubal Factor
• Male
• Unexplained
• Uterine/cervical (fibroid)
• Intrauterine Insemination
• In vitro fertilization (IVF)
• Intracytoplasmic Sperm Injection (ICSI)
- Anovulation
- Tubal Factor
- Male
- Unexplained
- Uterine/cervical (fibroid)
Pregnancy Rate per Cycle in Patients with Unexplained Infertility

No Treatment: 2.7
IUI: 3.8
Clomiphene: 5.6
Clomiphene & IUI: 8.3
HMG: 7.7
HMG + IUI: 17.1
IVF: 30
• Anovulation
• Tubal Factor
• Male
• Unexplained
• Uterine/cervical (fibroid)
In Vitro Fertilization (IVF)
IVF Success Rate

- Age
- Age
- Age
- 40 - 60%
- Cost $5500 + Medications
Intracytoplasmic Sperm Injection (ICSI)
Pre Implantation Genetic Diagnosis (PGD)

Sex Selection (Microsort)