

Serious acute inflammatory complication of ovulation induction as part of assisted conception techniques. Follows superovulation stimulated by hCG and human menopausal gonadotrophin. Rare with clomiphene except in PCOS. In OHSS the stimulated ovaries may form  $\geq 20$  follicles and swell resulting in very high levels of oestrogen production. Many inflammatory mediators are released and increase capillary permeability and fluid retention. Symptoms usually appear 4-5 days after harvesting of eggs.

### Epidemiology

- Despite careful monitoring, a mild degree of OHSS occurs in as 33% of IVF cycles.
- A moderate degree occurs in as many as in 3 to 5% of treatment cycles.
- It may be severe in  $<1\%$  of IVF cycles.

### Risk factors

- Polycystic ovary disease (greatly increases the risk)
- Hypothyroidism
- Younger ( $<35y$ ) & thinner (low BMI) women are at greater risk
- High oestrogen levels and a large number of intermediate-sized follicles
- Administration of GnRh agonist
- The use of hCG for luteal phase support

GnRH antagonists can be used to shorten the treatment cycle but also lower pregnancy rate.

### Classification/Presentation

*Mild:* Abdominal bloating, mild abdominal pain, ovarian size usually  $<8$  cm

*Mod:* Mod abdominal pain, N&V, USS shows ascites, ovaries  $\sim 8-12$  cm

*Sev:* Clinical ascites, small pleural effusion, oliguria, Hct  $>45\%$ ,  $\downarrow$ albumin/protein, ovaries  $>12$ cm

*Critical:* Shock, tense ascites or large pleural effusion, Hct  $>55\%$ , thromboembolism, WCC  $>25$ , ARF, ARDS

### Investigations

*Bloods:* FBC ( $\uparrow$ Hct), UEC (for RF), coags, LFT.

*Imaging:* CXR, pelvic/abdo USS

### Management

*Prevention:* monitoring of oestrogen level & USS and withholding hCG if high risk OHSS. IV albumin on the day of oocyte retrieval may help (NNT 18) and in PCOS short term metformin improved the pregnancy outcome and reduced the incidence of OHSS.

*Mild OHSS:* analgesia &  $\uparrow$ oral fluids for hypovolaemia. Settles  $<7d$  unless pregnancy occurs.

*Mod-Sev OHSS:*

- Strict fluid balance: IV Fluids & correct electrolyte abnormalities
- Albumin may also be given
- DVT prophylaxis
- Analgesia
- Antiemetics
- Paracentesis or pleurocentesis may give symptomatic relief
- Diuretics may be used if intravascular volume restored
- HDU or ICU may be required

### Complications

Thromboembolism, ARF, hyperK<sup>+</sup>, ARDS, ovarian torsion, infection, occasionally fatal.