



Prevention and treatment of ovarian hyperstimulation syndrome (OHSS)

OHSS is a complication of ovulation induction, which can have serious impact on a patient's health. This condition results in intravascular volume depletion and haemoconcentration. OHSS usually occurs 3 - 7 days after hCG administration and occasionally, 12-17 days after HcG and this is usually associated with pregnancy.

- 1. Classification of OHSS**
- 2. Diagnosis of OHSS**
- 3. Treatment of OHSS**



1. Classification of OHSS

- Mild: Ovarian distension and discomfort
Ovarian size <12cm
No clinically apparent ascites
- Moderate: E2>10,000 pmol/L
Ovarian size up to 12cms
Hct up to 0.45
WBC up to 15000
+ above symptoms
- Severe: E2 up to 20,000-30,000pmol/L
Ovarian size > 12cms
Hct > 0.45
WBC > 15000
Oliguria
Ascites
+ severe symptoms
- Critical: All of the above, plus-
Hct > 0.55
WBC >25,000
Pleural and pericardial effusions
Anuria
Renal failure
Thrombo - embolic phenomena

2. Diagnosis of OHSS

2.1 Presentation

- The most common presentation is abdominal pain and distension but patients may also present with vomiting, diarrhoea or breathlessness.
- Should the patient be admitted?
- On presentation, a full history and detailed clinical examination should be completed. Collect blood for a full blood count, including haematocrit and white cell count. Any of the following are indications for admission:
 2. Abdominal pain/ discomfort requiring potent analgesia
 3. The presence of breathlessness
 4. The presence of severe OHSS
 5. A haematocrit > 0.45 in the presence of symptoms
 6. A WBC >15000 in the presence of symptoms

2.2 Emergency investigations

- On admission the following steps should be followed:
 - Full blood count
 - Urea and electrolytes
 - Liver function tests
 - INR, APTT



- If there is any breathlessness present or clinical chest examination is abnormal, a chest x-ray should be arranged urgently. Otherwise, it should be ordered the following morning.
- Body weight and abdominal circumference should be measured on admission and daily thereafter.
- The following morning an abdominal ultrasound should be arranged.

2.3 Differential diagnosis

Remember to consider other potential diagnoses at this stage, including

Diagnosis	Clinical features
Ectopic pregnancy	Positive pregnancy plus localised pain
Rupture/haemorrhage/ torsion of an ovarian cyst	Localised pain with acute onset
Intraabdominal sepsis	Pyrexia, peritonism, generally unwell

3. Treatment of OHSS

3.1 Basic treatment

- On the basis of these investigations, the degree of severity of the condition should be ascertained and management planned appropriately
- Adequate analgesia should be arranged
- IV fluids should be given, preferably IV saline because of the tendency to hyponatraemia.
- TED stockings should be worn

3.2 Critical OHSS

In the presence of renal impairment, hepatic impairment, persistent hypovolaemia, coagulopathy, or thrombo-embolic phenomena, the expertise of an acute intensivist should be sought.

3.3 Additional treatment options

Low molecular weight heparin

As thrombo-embolic problems can complicate severe OHSS, treatment with low molecular weight heparin should be considered where:

- The OHSS is severe,
- There is any past history of thrombo-embolic disease
- The woman is aged >36
- The woman has a bodyweight >90kg
- The hospital stay looks likely to exceed 7 days

Where haemorrhage from an ovarian cyst is a strong possibility on clinical grounds, heparin should be withheld



Intravenous albumin

Due to the recent British Medical Journal meta-analysis indicating an excess of mortality with this treatment, it should rarely be used

Paracentesis

This can be an important part of management and should be carried out in the presence of severe abdominal distension where:

- The analgesia is not giving sufficient symptomatic relief
- The ascites is tense
- The haemoconcentration is not responding to medical therapy
- There is either oliguria or abnormal renal function tests

Diuretics

Diuretics are not required in the routine management of OHSS. These should be reserved for patients pulmonary oedema and should only be given after restoration of plasma volume with crystalloid fluid.