Ovarian hyperstimulation syndrome (OHSS)

Patient Information Series – What you should know, what you should ask.

What is an OHSS?

Ovarian hyperstimulation syndrome is an excessive systemic response to ovarian stimulation characterized by a wide spectrum of clinical, ultrasound and laboratory parameters. It may be classified as mild, moderate, severe, or critical, according to symptoms, ultrasound, and laboratory parameters. OHSS is an iatrogenic syndrome that occurs in women undergoing assisted reproductive technology (ART) with controlled ovarian stimulation (COS) with gonadotrophins and ovulation induction with human chorionic gonadotrophin (hCG) or less frequently with clomiphene citrate. Rarely, it can be the spontaneous consequence of high production of endogenous gonadotropins (pituitary adenomas, ectopic secreting tumors) or high beta-hCG level (multiple pregnancies, gestational trophoblastic disease, beta-hCG-secreting tumor) or gonadotropin-like molecules (like thyroid-stimulating hormone - TSH, in hypothyroidism).

What is the incidence of the OHSS?

In invitro fertilization (IVF) cases, the reported incidence of mild OHSS is 20-33% of cycles, and of moderate-severe OHSS is 0.20% of cycles.

What are the risk factors for the OHSS?

Risk factors are previous history of OHSS, young age, low body mass index, polycystic ovary syndrome (PCOS), high antral follicle count at ultrasound examination, and high levels of AMH. Risk factors identified after COS are elevated estradiol levels, development of >25 follicles, >15-20 oocytes retrieved.

What is the clinical presentation of the OHSS?

The typical clinical symptoms are abdominal bloating, pain, nausea, vomiting and diarrhea. Weight gain may be observed.

What are the prevention strategies for the OHSS?

Patients with high risk to develop OHSS should be identified before starting COS. A tailored COS should be applied in these women. Another option to prevent OHSS in high-risk patients, is to retrieve oocytes, and then freeze all of them.

What is the management of the OHSS?

In most cases, OHSS is self-limiting. Women with mild or moderate OHSS can be managed as outpatients. Hospitalisation should be considered for women who [2]are unable to achieve satisfactory pain control, or to attend for regular outpatient follow-up, or to maintain adequate fluid intake due to nausea, or for those with worsening symptoms after outpatient monitoring. Increasing abdominal pain, oliguria, weight gain, increased abdominal circumference, and shortness of breath suggest worsening OHSS.

Does OHSS impact pregnancy outcome?

IVF pregnancy complicated by moderate or severe OHSS has an increased risk of spontaneous abortion, venous thrombosis, gestational diabetes, hypertensive disorders, placental abruption, premature delivery, and low birthweight compared to IVF pregnancy not associated with OHSS. These pregnancies should be considered high-risk and should be monitored closely.

Will it happen again?

Women with previous OHSS have an increased risk of recurrence, but treatments can be tailored to reduce this risk.

What other questions should I ask?

- Does my medical history present any risk factors for OHSS?
- Do my symptoms after IVF correspond to OHSS?
- When should I seek medical evaluation for my symptoms after COS?
- How often will I have ultrasound examinations done?
- What can I do to reduce the risk of complications during OHSS?
- Could I develop complications during my pregnancy after OHSS?
- Where should my pregnancy be followed after OHSS?
- Where should I deliver?

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