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Hormones & Health

A magazine on Clinical Endocrinology

ALPHA HRC

From the editors desk

Dear all,

We are happy to introduce the first issue of our magazine on hormonal health. This magazine will focus on updates related to common clinical problems in diabetes, thyroid, obesity, parathyroid, pituitary, gonadal disorders, short stature, adrenal, bone and other metabolic diseases. We have focused on clinical case discussion, Question & Answer, Journal updates & Practical tips on drug usage. This is a platform for us to interact and share our clinical experiences that would enable us to serve our patients better. We are eagerly waiting for any clinical queries that can be answered and clarified. We welcome your valuable feedback and suggestion for the betterment of the magazine.

Regards

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For Suggestions / Posting Questions / Quiz and any other queries

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Case Discussion

PCOS - complete cure

Case: 18-year-old female was evaluated for pain abdomen. Her ultrasound abdomen was suggestive of bilateral large polycystic ovaries with right and left ovary measuring around 388ml and 145ml in volume respectively. In view of very large cyst, pain and risk of torsion, she was initially considered for surgery.

She attained menarche at the age of 13 years. She had regular periods but started to have irregular periods for the past 6 months. She was 156 cm in height and 62 kg in weight, but has increased in weight by 2 kg during the past 3 months. She had grade 2 goiter. Her TSH was more than 100 and her Free T4 was low. Her prolactin was mildly elevated to 32, LH was 10 and FSH was 8.

The PCO was considered to be the result of hypothyroidism and the patient was treated with 100mcg of thyroxin. Her pain subsided in 3 days and the cyst size regressed to less than 50 % in 2 weeks and completely disappeared in 3 months without any surgical intervention.

Discussion:

The diagnosis of polycystic ovary syndrome (PCOS) is to be made if two of the three following criteria are met: androgen excess, ovulatory dysfunction, or polycystic ovaries (PCO), *but disorders that mimic the clinical features of PCOS like thyroid disease, hyperprolactinemia, and non-classic congenital adrenal hyperplasia has to be excluded*. In our case hypothyroidism was the cause for PCO and hence the ovaries regressed in size with adequate thyroxin replacement.

PCO is very common and is seen in at least 30% of females but not all patients have PCOS. Cutaneous manifestations of PCOS include terminal hair growth, acne, alopecia, acanthosis nigricans, and skin tags. Women with PCOS are usually obese (Lean PCOS also exists) and are at increased risk of anovulation, infertility, endometrial cancer, depression, obstructive sleep apnea, fatty liver, diabetes and Dyslipidemia. Patients with PCOS can present with cutaneous features, irregular periods or fertility problem. Treatment of PCOS depends on the primary concern of the patient.

Treatment of PCOS:

The treatment of PCOS depends on the primary concern of the patient like hirsuitism, irregular periods, fertility, cutaneous (or) metabolic problem.

1. Role of weight loss

Weight loss strategies should begin with calorie-restricted diets for adolescents and women with PCOS who are overweight or obese. Weight loss is likely beneficial in obese patients for both reproductive and metabolic dysfunction. Weight loss is likely insufficient as a treatment for PCOS in normal weight women.

2. Role of Hormonal contraceptives (HCs)

HCs (ie, oral contraceptives, patch, or vaginal ring) are recommended as first-line management for the menstrual abnormalities and hirsutism/acne of PCOS, which can treat these two problems concurrently.

3. Role of metformin

The use of metformin as a first line treatment of cutaneous manifestations, for prevention of pregnancy complications, or for the treatment of obesity has no longer been suggested.

a) Metformin is suggested in women with PCOS who have T2DM or IGT, who fail lifestyle modification.

b) Metformin can be considered as a second line therapy for women with PCOS and menstrual irregularity who cannot take or do not tolerate Hcs.

c) Metformin can be considered as an adjuvant therapy for infertility to prevent ovarian hyperstimulation syndrome (OHSS) in women with PCOS undergoing in vitro fertilization (IVF).

4. Role of other drugs.

The guidelines do not recommend the use of **insulin sensitizers,** such as inositols (due to lack of benefit) or **thiazolidinedione** (given safety concerns), for the treatment of PCOS.

Q & A

Question-1:

I have a patient, 32 year old female with an increase TSH to a value of 8, but normal T3 and T4.She has no previous history of thyroid disease or on any thyroid medication. Should I give her thyroxin medication?

Answer: This clinical scenario is called **Subclinical Hypothyroidism** where TSH alone is increased and T3 and T4 are normal. Not all patients require treatment and many a time it can spontaneously revert back to normal. Thyroxin therapy is warranted only when any one of the following is present;

1. TSH is $>$ 10
2. Anti TPO antibody is positive
3. Goiter
4. Pregnancy or Subfertility
5. Depression
6. Dyslipidemia
7. If your TSH values show an increasing titer on follow-up

If your patient has any one of these features thyroxin may be considered and it is preferable to start with low dose and then up titrate based on the TSH values.

Question-2:

I have a 30-year-old female and she happened to undergo hysterectomy with ovary removal for severe PID (2 months before). She has no other co-morbidities. Is it necessary for me to start her on any hormone replacement?

Answer: The ovaries secrete estrogen that is required not only for establishing secondary sexual characters, regular menstruation and reproduction but also for

cardiovascular, psychological and bone health. Estrogen replacement has to be considered till the age of 40 years in all cases of **premature menopause**. It is also important to monitor for potential adverse effect of estrogen including screening for breast cancer. As of today HRT beyond 40 years has no long term benefits and is highly controversial.

In case of Premature ovarian failure with intact uterus E2/P has to be given and in a patient with absent uterus E2 alone may be sufficient.

Question-3:

I had seen a 19-year-old boy and he is 150 cm in height and 60kg in weight. He has normal facial hair. His parents are around 150 to 160 cm in height. He has no other medical problem He is very much concerned about his height. Is there any way he can grow in height now?

Answer: Linear height of any individual is complete usually by 16 years in girls and 18 years in boys, but can cease earlier depending on the pubertal state. Again the height is determined by the genetic predisposition, nutritional factors and other medical problems. Linear growth is possible as long as the epiphyseal bones are open. Other evaluation and treatment will be based on the bone age and pubertal state of the patient.

In your case, since he has a normal adult facial hair, he should have completed puberty. An X-ray of the wrist to assess the bone age is very valuable and if the bones are fused, linear growth may not be feasible by medical therapy. Hence earlier evaluation is utmost important in any patient with **short stature.**

You can get your clinical queries answered through the Q&A section.
Please feel free to send your queries by mail to drvkumaravel@gmail.com

Journal watch

1. Impact of hypoglycemia on pregnancy

Clinical Diabetes October 2013 vol. 31 no. 4 179-188

- Normal plasma glucose levels are ~ 20% lower during pregnancy. Fasting glucose levels average 75 mg/dl, whereas postprandial elevations peak at 110 mg/dl.
- The Endocrine Society has recommended that a plasma concentration < 70 mg/dl should be the cut-off value for defining hypoglycemia.
- Women with type 1 diabetes experience three times more hypoglycemia during the first trimester of pregnancy than when they are not pregnant.
- Hypoglycemia rates tend to decline during the third trimester
- Maternal hypoglycemia generally does not increase risks to the fetus as long as pregnant women avoid injury during hypoglycemia.

2. Glucometer sugar: How accurate are they?

Diabetes SciTechnol: v.3(4); Jul 2009

- Glucometer sugar or self monitoring of blood glucose (SMBG) has become an integral component of diabetes management
- It measures capillary glucose.
- ISO 15197 is the standard for evaluating the accuracy of blood glucose meters. It specifies that in a reliable glucometer, ninety five percent of all measured values should fall within
    - ⊗ 20% of glucose values above 75 mg/dl
    - ⊗ 15 mg of glucose values below 75 mg/dl.
- The ADA has suggested that systems that measure blood glucose should have an inaccuracy of less than 5%.
- Variation in hematocrit can cause serious errors in glucometer blood sugar.

3. How Early Should Obesity Prevention Start?
N Engl J Med 2013; 369:2173-2175

- During pregnancy, excessive weight gain in mother can alter fetal growth and metabolism, leading to higher adiposity in the offspring
- After birth, rapid weight gain in the first 3 to 6 months of life is a potent predictor of later obesity and cardiometabolic risk.
- Among formula-fed infants, the introduction of solids before 4 months was associated with a six-fold increase in the odds of obesity 3 years later
- Intervention during the prenatal period and the first postnatal year is important to prevent obesity.

Drug watch

Orlistat

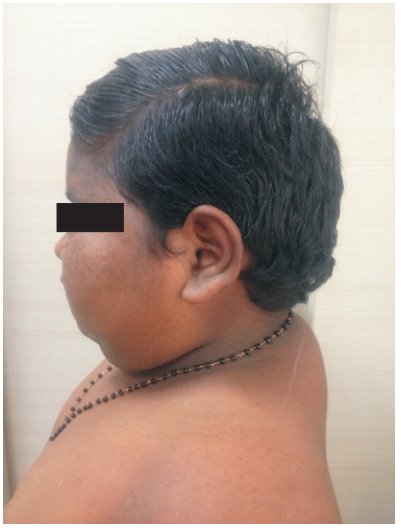
Mechanism of action: It is a gastrointestinal lipase inhibitor that is used for obesity management as add on to diet and exercise. It inhibits the absorption of dietary fats.

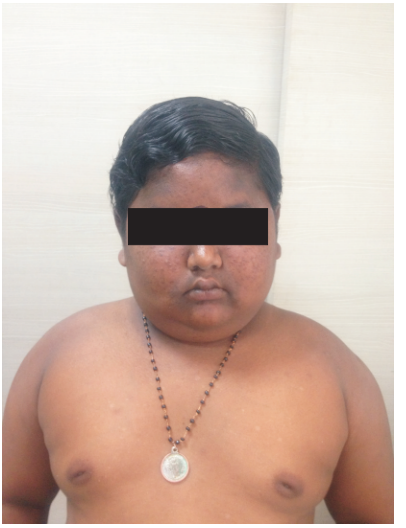
Recommended dose: 120mg three times a day just before food

Practical point:

1. It can cause steatorhea and oily stools.
2. Since orlistat interferes with the absorption of certain vitamins (fat-soluble vitamins including A, D, E, K), a daily multivitamin supplement containing these nutrients is recommended. Take the multivitamin at least 2 hours before or 2 hours after taking orlistat (such as at bedtime)

Quiz - I





This is a 12-year-old boy presenting with sudden onset of weight gain and acne. He has no history of drug intake. He had cervical hump.

What is the probable diagnosis and test of choice to confirm the same?

Send your answers on or before 10th march 2014

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ALPHA HOSPITAL
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Born with

her moms eye

her fathers nose

her grandmothers ear

constipation

Absent Thyroid

Congenital hypothyroidism is not very uncommon with a incidence of 1 in 2500 live births. Screen for congenital hypothyroidism, initiate early treatment, prevent mental retardation and short stature.

You identify...We treat together