

# Polycystic ovary syndrome

# **Polycystic ovary syndrome (PCOS)**

## **Definition**

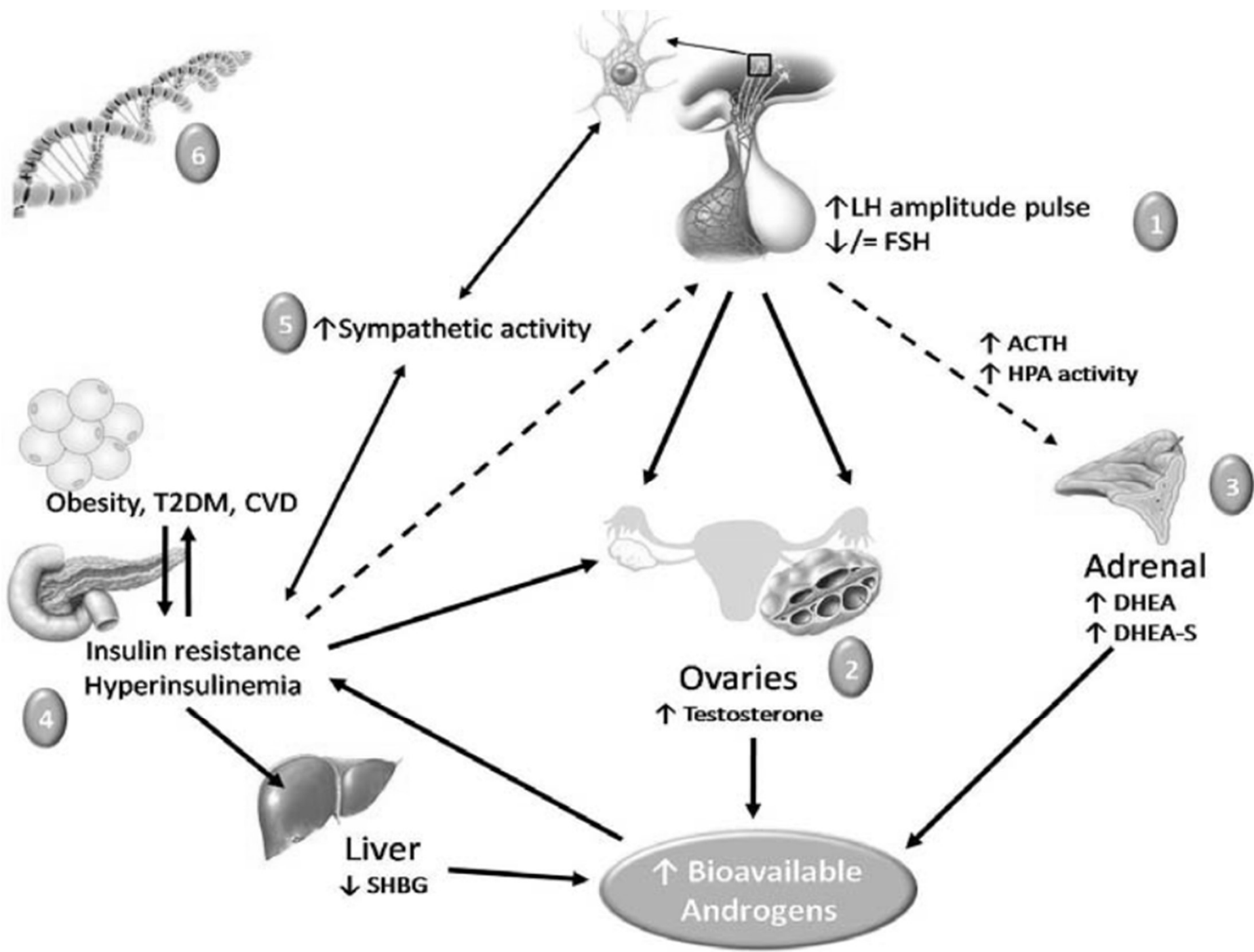
- ❑ Polycystic ovary syndrome (PCOS) is the most common endocrinopathies affecting women in the reproductive age and associated with a broad range of clinical, hormonal, and metabolic derangement

## Prevalence

- ❑ The prevalence of PCOS among women of reproductive age in the general population has been estimated at **4% to 12 %**
- ❑ The prevalence of PCOS appears to be higher from **37% to 90%** in women with menstrual abnormalities and also is increased in the presence of certain diseases, like women with **epilepsy**

# Pathophysiology

- ❑ The pathogenesis of PCOS is thought to be complex and multifactorial but is poorly understood.
- ❑ The heterogeneity of the syndrome may well reflect multiple underlying mechanisms in which **androgens** and **insulin** are two key endocrine mediators.



## **Clinical features of PCOS**

**PCOS is characterized by**

- Ovulatory dysfunction: oligo-ovulation or anovulation, presenting clinically as a woman with irregular menstrual cycles usually **oligomenorrhea** or **amenorrhea** and associated with **infertility**
- Hyperandrogenism present clinically as **hirsutism, acne, and/or male pattern alopecia**

➤ Polycystic ovaries morphology which requires the presence of **12 or more** follicles measuring **2-9 mm** in diameter per ovary arranged peripherally around a dense core of stroma or ovarian volume **above 10 cc**

Signa 1.5T SYS#MR01LX01

S 78

Ex: 24

Se: 107

Im: 9

Cor P27.1

Mag = 1.2

FL:

ROT:

ET:16

R

1

51

L

1

3

4

FSE-XL/90/FL:C

TR:4420

TE:108/EF

EC:1/1 20.8kHz

TORSOPA

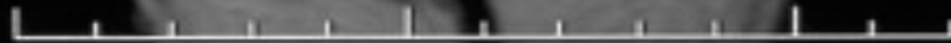
FOV:30x30

7.0thk/1.5sp

19/02:08

384X224/2 NEX

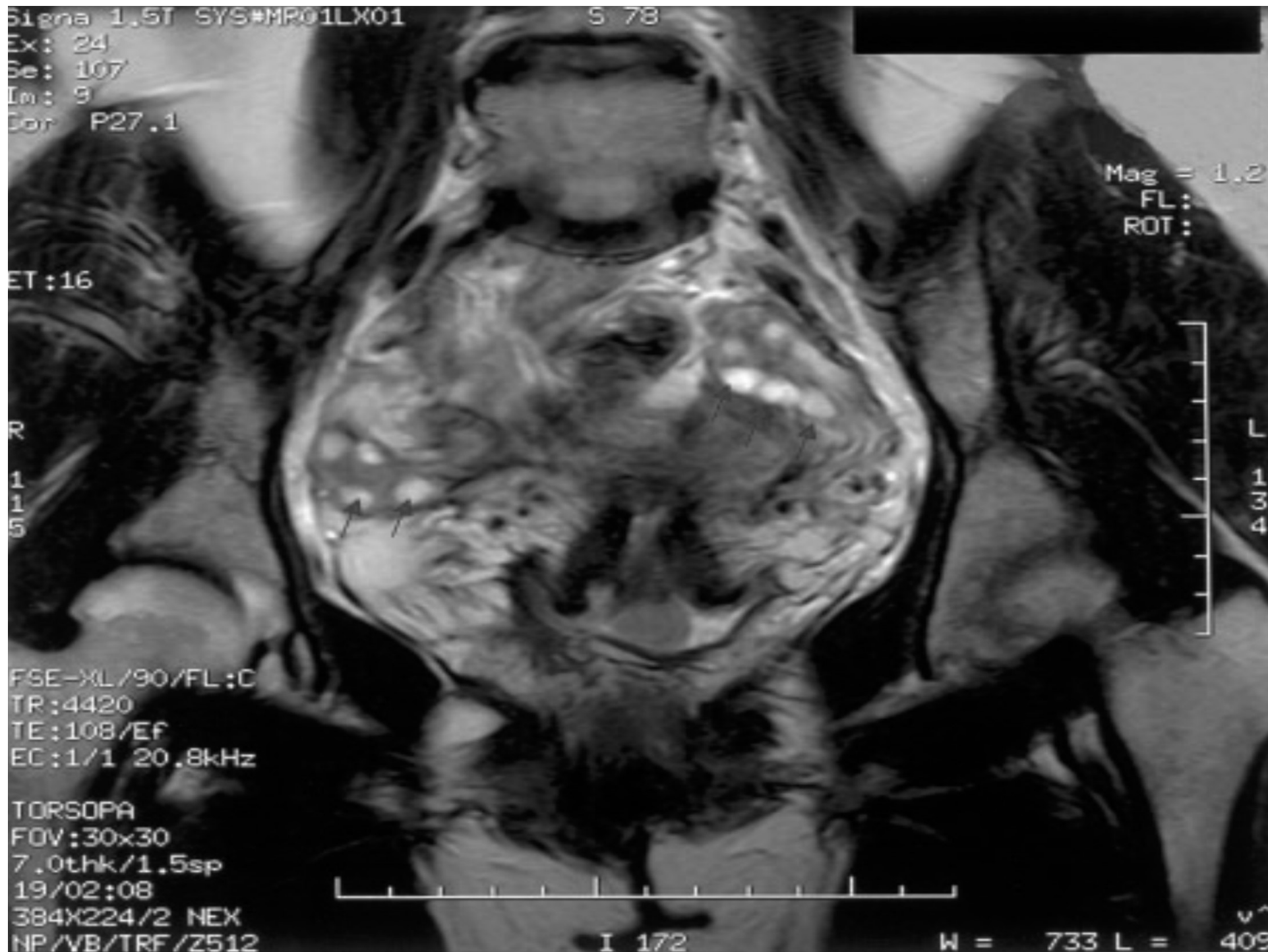
NP/VB/TRF/Z512



I 172

W = 733 L =

409





# Diagnosis of PCOS

Definition	Diagnostic criteria A	Phenotypes
<b>NIH 1990</b>	Requires the presence of 1) Hyperandrogenism (HA) B and 2) Ovulatory dysfunction (OD) C	1. HA + OD
<b>Rotterdam 2003</b>	Requires the presence of at least two of 1) Hyperandrogenism B 2) Ovulatory dysfunction C 3) PCO morphology D	1. HA + OD + PCO 2. HA + OD 3. HA + PCO 4. PCO + OD
<b>AES 2006</b>	Requires the presence of 1) Hyperandrogenism B and 2) Ovarian dysfunction (ovulatory dysfunction C or PCO morphology D)	1. HA + OD + PCO 2. HA + OD 3. HA + PCO

# Long-term complication of PCOS

- Type II diabetes mellitus
- Metabolic syndrome
- Cardiovascular risk
- Endometrial hyperplasia and cancer



## Treatment of PCOS

- ❑ The treatment of PCOS consists mainly of controlling the symptoms of the syndrome in an attempt to achieve:

**Short-term goals** include improvement in symptoms like menstrual irregularity, hyperandrogenesis symptoms, treatment for infertility if required and reduction of weight,

**Long-term goals** including reduction of diabetes, cardiovascular disease and endometrial hyperplasia risks

## **Non-pharmacologic treatment**

- ❑ Non pharmacologic measures are universally recommended; these include diet, exercise, and weight reduction
- ❑ **Modest weight loss of less than 10%** has been shown to increase the frequency of ovulation, improve conception, and reduce androgen level and insulin resistance in women with PCOS

## Pharmacologic treatment

Today various classes of drugs being used in PCOS women with various benefit, these include:

- ❖ **Combined oral contraceptives:** recommended for women seeking for regularity in menstrual cycles and relief from hyperandrogenic symptoms, while not seeking fertility.
- ❖ **Clomiphene citrate (CC):** constitutes one of the first-line treatments for ovulation induction in anovulatory women with PCOS

❖ **Antiandrogenic agents:** which considered beneficial therapeutic options for hirsutism, acne, and other hyperandrogenism symptoms include:

➤ **Cyproterone acetate**

➤ **Spirolactone**

➤ **Finasteride**

❖ **Insulin-sensitizing drugs:** these agents are intended to correct the underlying metabolic defect of PCOS instead of simply treating the symptoms

## **Metformin (Glucophage) <sup>®</sup>**

- ❑ Metformin is a biguanide currently used as an oral antihyperglycemic agent and is approved by FDA to manage type 2 diabetes mellitus.

❑ Metformin likely plays its role in women with PCOS through a variety of actions, including:

- **Reducing insulin** levels and improving insulin resistance so, altering the effect of insulin on ovarian androgen biosynthesis, theca cell proliferation.
- In addition, it inhibits human thecal cell androgen synthesis directly.