

## CASE SIX

**Short case number: 3\_24\_6**

**Category: Endocrine and Reproductive Systems**

**Discipline: Obstetrics & Gynaecology**

**Setting: General Practice**

**Topic: Hirsutism [SDL]**

### Case

Josephina Calabresi presents to your surgery because of concerns about increased facial hair. She is 19 years of age, has regular periods and commenced her periods at the age of 12. She always has had a lot of hair but has noticed an increase in the past few months. She is particularly concerned about her facial hair.

### Questions

1. Describe the Ferriman-Gallwey Hirsutism system and provide a brief description of how it is used in the assessment of patients with hirsutism.
2. Describe the pathophysiology of hirsutism and associated features.
3. In a table list the 4 major groups of disorders that cause hirsutism.
4. Discuss the major treatments available for idiopathic hirsutism.
5. Hirsutism is one sign of virilisation. What are the others and why is it important to distinguish between the two signs.
6. Discuss the relevance of family history and racial differences in a woman who presents with hirsutism.

### Suggested Reading

- Abbott, J., Bowyer, L., & Finn, M. (2014). *Obstetrics and Gynaecology: an evidence-based guide (2nd ed)*. Australia, Elsevier
- Dewhurst's Textbook of Obstetrics & Gynaecology, Edmonds K [editor]. Blackwell Publishing. 2007. Pg 368; 386-387

**Describe the Ferriman-Gallwey Hirsutism system and provide a brief description of how it is used in the assessment of patients with hirsutism.**

See tutor HB answer

**Describe the pathophysiology of hirsutism and associated features.**

Excessive hair growth in an androgen dependant pattern (Affects 10-15% Women)

- Beard Area
- Abdomen
- Around Nipples

Caused by Increased Androgen Production OR Increased sensitivity of hair follicles to androgens

- Androgens cause hairs to transform from fine, straight to larger, coarser, curlier and darker

**What are the 4 major groups of disorders that cause hirsutism.**

1. Idiopathic (increased sensitivity of hair follicles to androgens, the androgen levels themselves are not raised)
2. Ovarian - PCOS
3. Adrenal - Congenital adrenal hyperplasia, Cushing's, Virilizing tumours
4. Iatrogenic - Androgenic Drugs, steroids, contraceptives, phenytoin

**Discuss the major treatments available for idiopathic hirsutism.**

Anti-Androgens (e.g. Cyproterone acetate) - Antagonise androgens at receptors AND reduces androgen synthesis.

Oestrogen (e.g. COCP - Suppresses ovarian androgen production - *N.B this will only work in patients who's hirsutism is of ovarian origin*

*Spironolactone - Competitive antagonist at androgen receptors*

**Hirsutism is one sign of virilisation. What are the others and why is it important to distinguish between the two signs.**

Virilisation very rare. Includes:

- Hirsutism
- +
- Clitoromegaly
- Male pattern baldness
- Deepening of voice

**Discuss the relevance of family history and racial differences in a woman who presents with hirsutism.**

More common in Greek/Italian/Mediterranean??

Some women will have a family history

### Question 1

A standardised scoring system, such as the modified Ferriman and Gallwey score may be used to evaluate the degree of hirsutism before and during treatments for hirsutism.

The chart is used to provide an initial score, with a scale of 0 – 3 at each of 12 points, depending on severity, and for the monitoring of progress with therapy.

- Upper lip
- Face
- Chin
- Jaw and neck
- Upper back
- Lower back
- Arm
- Thigh
- Chest
- Upper abdomen
- Lower abdomen
- Perineum

### Question 2

Hirsutism is excessive hair growth in an androgen dependent pattern. It is applied to females who complain of hair growth in the beard area, around the nipples and in a male pattern on the abdomen. It affects around 5-15% of women. Typically hirsutism is caused by increased androgen production increased sensitivity of hair follicles to androgens Androgens induce the transformation of fine vellus hair (small, straight, and fair) into coarse terminal hair (larger, curlier, and darker and more visible). Some females with excess androgen may not have hirsutism but presents with seborrhoea, acne or alopecia.

### Question 3

The most common cause is idiopathic (androgen levels are not increased) resulting from hypersensitivity of the hair follicle to androgen. There may be a raised level of peripherally derived androgens such as 3 alpha-androstenediol glucuronide. The condition usually begins in the early teens and increases with age. A family history may be present.

#### Other causes:

1. Adrenal - congenital adrenal hyperplasia, Cushing's syndrome, virilizing tumours
2. Pituitary - acromegaly, hyperprolactinaemia
3. Ovarian - polycystic ovarian syndrome, (most common cause of hyperandrogenism),
4. Thyroid dysfunction
5. Iatrogenic - androgenic drugs, oral contraceptives, phenytoin
6. Turner's syndrome

#### **Question 4**

The underlying cause for hirsutism should always be treated if possible. Physical methods of hair removal can be used such as waxing which removes a large part of the hair shaft underlying the skin surface. Other methods include shaving, bleaching, plucking, depilation, and electrolysis.

Medical treatments include:

1. Anti-androgens e.g. cyproterone acetate - competitively inhibits androgens at peripheral receptors and may also reduce androgen synthesis. Often cyproterone acetate is used in a combined preparation (2mg cyproterone and 35 mcg ethinylestradiol) Dianne which is useful in women who also wish to receive oral contraception.
2. Oestrogen such as ethinylestradiol, or a combined oral contraceptive pill (without an androgenic progesterone) - these suppress ovarian androgen production in patients in whom the androgen is of ovarian origin.
3. Spironolactone occupies androgen binding sites on target tissues and has direct anti-androgenic properties.

#### **Question 5**

Virilization is rare. In females clinical features include:

- Clitoromegaly
- Temporal hair recession
- A deepening of the voice
- Hirsutism

This condition must be investigated to exclude androgen-secreting adrenal and ovarian tumours.

#### **Question 6**

The most common cause of hirsutism is idiopathic (androgen levels are not increased) resulting from hypersensitivity of the hair follicle to androgen. There may be a raised level of peripherally derived androgens such as 3 alpha-androstenediol glucuronide. The condition usually begins in the early teens and increases with age. A family history may be present.