PCOS

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Background

- Polycystic ovary syndrome (PCOS) is a significant public health issue with reproductive, metabolic and psychological features.
- PCOS is one of the most common conditions in reproductive aged women affecting 8-13% of reproductive-aged women with a higher prevalence in certain ethnicities
- Up to 70% of affected women are undiagnosed

Rotterdam Criteria

Two of the following three criteria are required:

- Oligo/anovulation
- Hyperandrogenism
  - clinical (hirsutism or less commonly male pattern alopecia) or
  - biochemical (raised FAI or free testosterone)
- Polycystic ovaries on ultrasound

Other aetiologies must be excluded such as congenital adrenal hyperplasia, androgen secreting tumours, Cushing syndrome, thyroid dysfunction and hyperprolactinaemia

Presentation

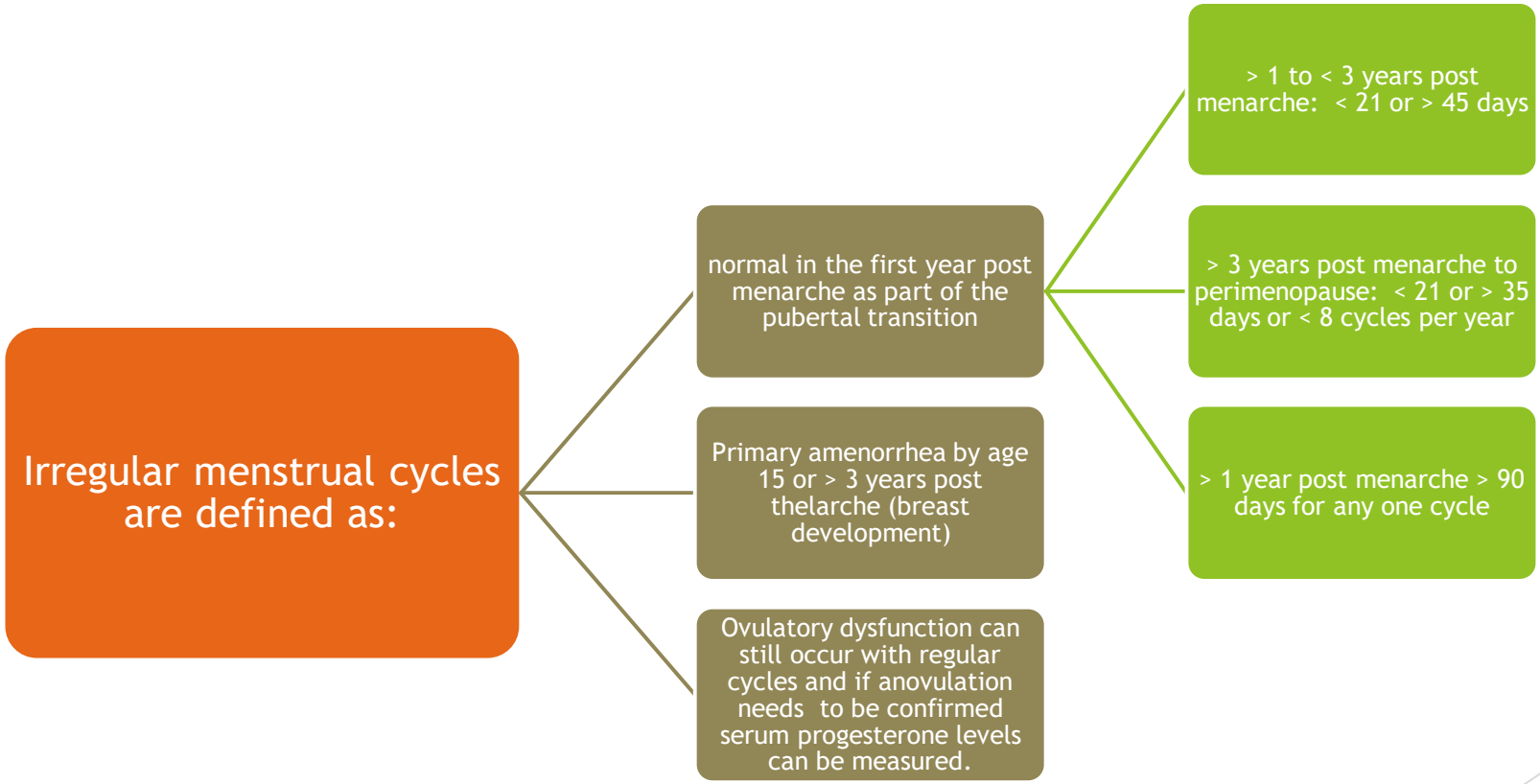
- Hirsutism and male pattern balding consistent with hyperandrogenism, acne
- Irregular or absent menstrual cycles
- Subfertility or infertility
- Psychological symptoms – anxiety, depression, psychosexual dysfunction, eating disorders
- Metabolic features – obesity, dyslipidaemia, diabetes

Phenotypes

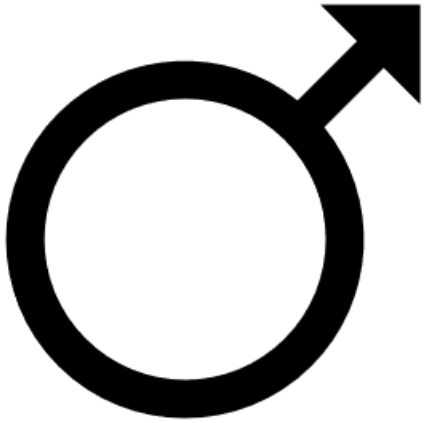
National Institutes of Health (NIH) evidence-based methodology workshop of PCOS 2012 phenotypes:

- Phenotype A: Androgen excess + ovulatory dysfunction + polycystic ovarian morphology
- Phenotype B: Androgen excess + ovulatory dysfunction
- Phenotype C: Androgen excess + polycystic ovarian morphology
- Phenotype D: Ovulatory dysfunction + polycystic ovarian morphology

Oligo/anovulation



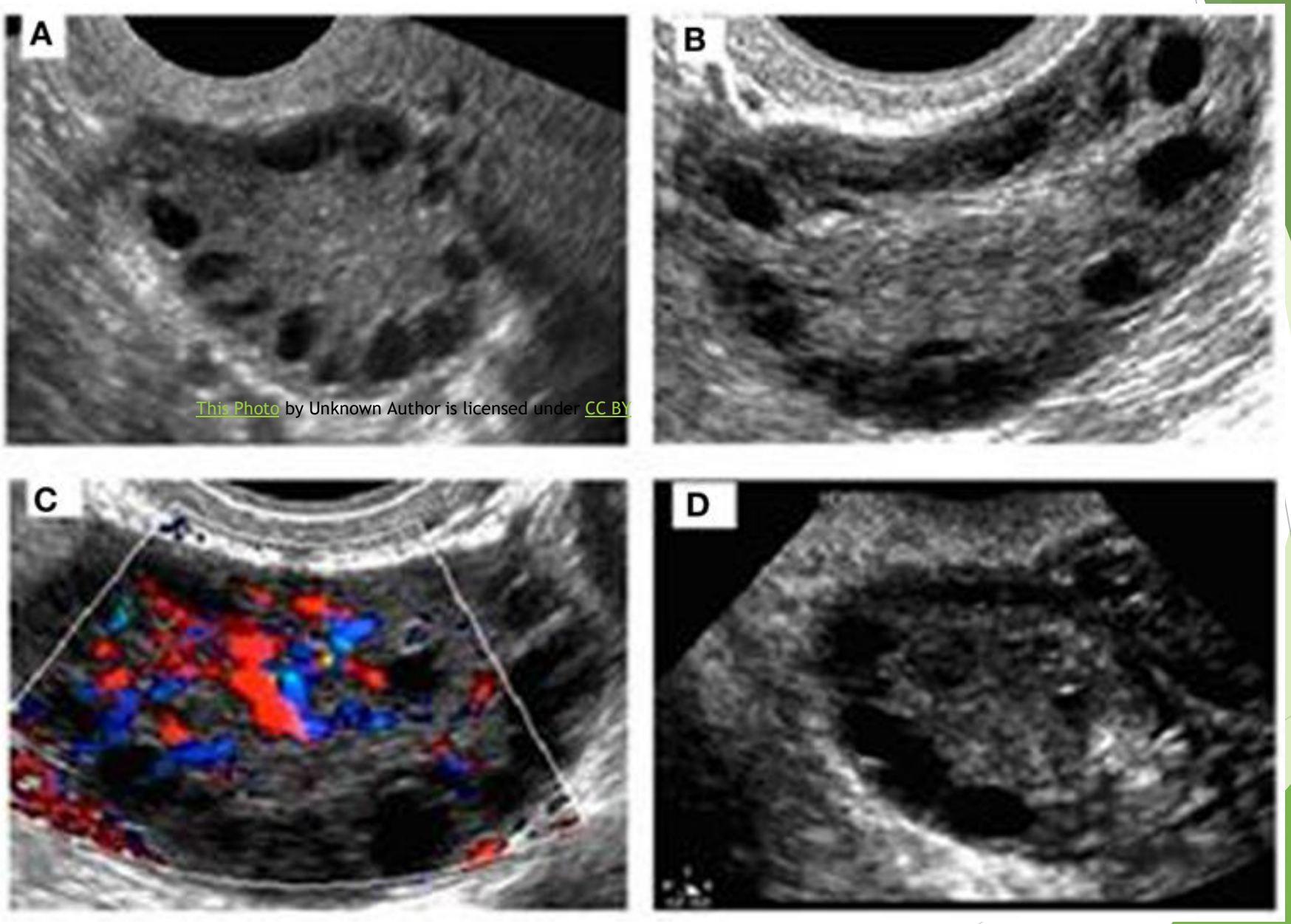
Hyperandrogenism



- Hirsutism: difficult to assess as most women treat this.
- Acne
- Male pattern alopecia
- Biochemical hyperandrogenaemia
- If free testosterone is significantly raised or there is evidence of rapid virilisation, further investigations are required to exclude late onset congenital adrenal hyperplasia and virilising tumours

Ovarian Morphology

- polycystic ovaries on ultrasound are diagnosed when 12 small antral follicles are seen in per ovary measuring 2 to 9 mm in diameter or an ovary that has a volume of greater than 10 mL. A single ovary meeting either or both of these definitions is sufficient for the diagnosis of polycystic ovaries.
- A unilateral polycystic ovary is rare but still clinically significant.
- Ultrasound is not reliable in the diagnosis of polycystic ovaries in adolescent and young women. Up to 70% of young women may have polycystic ovaries on ultrasound
- Ultrasound should not be used to diagnose PCOS within 8 years of menarche.



Management

Management of PCOS requires identification and management of current symptoms, attention to fertility and emotional concerns, as well as preventive activities to minimise the risk of future associated health problems.

- Lifestyle modification
- Medical treatment
- Surgical treatment
- Ovulation induction/Assisted reproduction techniques

Lifestyle Modification

Higher prevalence of PCOS in women who are overweight and obese

Women with PCOS have a higher rate of weight gain than those without PCOS – about 1–2 kg/year.

Even a small amount of weight loss (5%) can help restore menstrual cycle regularity and ovulation, assist mental wellbeing, halve the risk of diabetes in high risk groups and help prevent future cardiometabolic risk.

Lifestyle Modification

HEALTHY DIET WITH CALORIC RESTRICTION

BEHAVIOUR CHANGE SUPPORT AND EXERCISE TO AID IN WEIGHT LOSS AND PREVENTION OF FUTURE WEIGHT GAIN.

Medical Treatment

Irregular menstrual cycles

- The combined oral contraceptive pill (COCP) is effective in achieving menstrual cycle regularity and also provides contraception if this is required.
- The 35 microgram ethinyloestradiol plus cyproterone acetate preparations should not be considered first line in PCOS as per general population guidelines, due to adverse effects including venous thromboembolic risks.
- In women with oligo/amenorrhoea, intermittent progestin every 3 months may be used to induce a withdrawal bleed and protect the endometrium from hyperplasia.

Medical Treatment

Hirsutism

- The choice of options depends on patient preference, impact on wellbeing and access and affordability.
- The best treatment for localised hirsutism is cosmetic therapy (eg. laser and electrolysis) by an experienced operator, but expense and access may be barriers to this treatment for some women.
- Treatment of local facial hair may be augmented in the short term by topical eflornithine, but this is also costly.
- Generalised hirsutism may benefit from a combined medical and cosmetic approach.The COCP is first line medical therapy with no clear evidence to support the benefit of any particular COCP. Metformin may also provide some benefit.

Surgical Treatment

- Laparoscopic ovarian drilling

Subfertility

Polycystic ovary syndrome is the most common cause of anovulatory infertility.

Lifestyle modification:

- In women aged less than 35 years with a BMI >25 kg/m^2 and no other cause of infertility, an intensive lifestyle program addressing weight loss, without any pharmacological treatment for the first 6 months.
- If lifestyle measures are unsuccessful, then consider referral to a fertility specialist.
- Referral should be initiated early for women aged more than 35 years and in couples with additional factors contributing to infertility.

Ovulation induction in PCOS

- 1st line: Letrozole superior to clomiphene citrate
- 2nd line: gonadotrophins
- If the above are unsuccessful or if there are other factors contributing to infertility such as endometriosis or male factors, in vitro fertilisation or intra-cytoplasmic sperm injection is recommended.
- Laparoscopic ovarian drilling

Cardiovascular Risk Modification

- Assess cigarette smoking and discuss quitting
- Weight monitoring and management
- Lipid profile monitoring every 2 years if initially normal and every year if abnormal and/or overweight or obese.
- Measure blood pressure annually if BMI <25 kg/m^2, or every visit if BMI >25 kg/m2
- Assess for prediabetes with oGTT

Metformin

- Proven to be beneficial in patients with impaired glucose tolerance/insulin resistance
- Metformin in addition to lifestyle modification, could be recommended in adult women with PCOS, for the treatment of weight, hormonal and metabolic outcomes.
- Can be used as an adjunct to COCP for cycle regulation
- Can be used as an adjunct to oral or parenteral OI agents
- Good safety profile
- Side effects may be significant

THE END