Amenorrhoea & Menorrhagia

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Objectives

- To understand
  - The aetiology of these conditions
    - Anatomical
    - Pathological
  - The management
    - History and examination
    - Investigation
    - Treatment

Approach

- Anatomy & Histological
- Physiologic
- Genetic
- Embryological
- Iatrogenic
- Pathological
  - Infectious/immunological
  - Neoplastic – benign or malignant
- Non –gynaecological
  - Endocrine, haematological

Amenorrhoea - Classifications

- Physiological
  - Pre-pubertal
  - Pregnancy
  - Menopausal
- Primary or secondary
- Hypothalamic, pituitary, ovarian, or anatomical
- Ovulatory or anovulatory

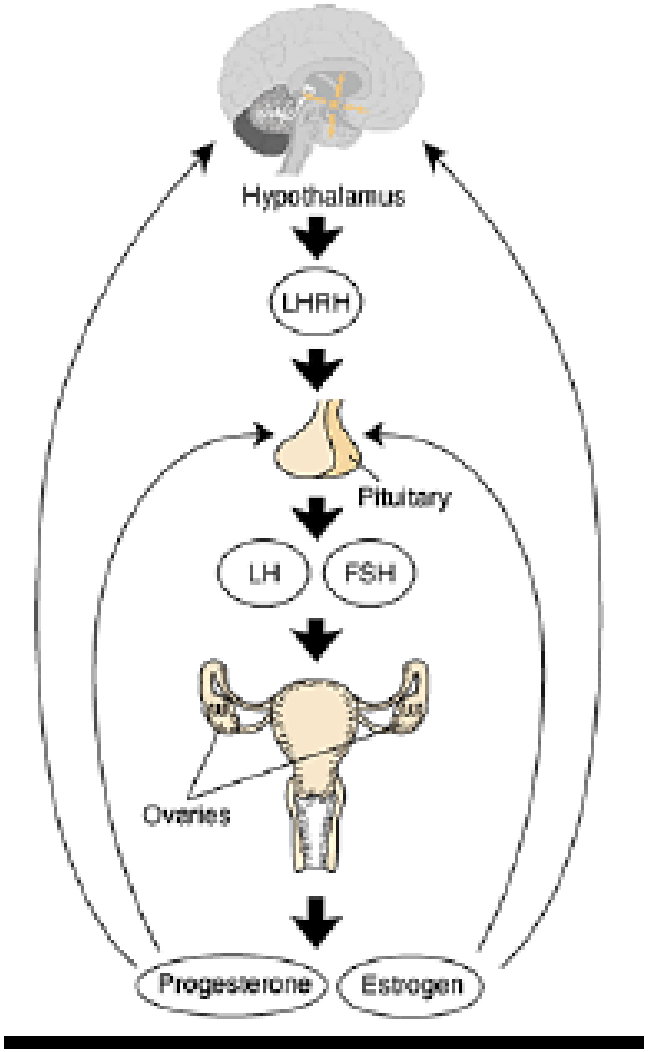
Amenorrhoea - Definitions

- Primary
  - Failure to menstruate by 16 years of age with normal secondary sexual characteristics (breast, axillary/pubic hair, growth spurt
  - Failure to menstruate by 14 years of age (expected menarche) without normal secondary sexual characteristics
- Secondary
  - cessation for at least six consecutive months when menstruation has previously occurred

Causes of amenorrhoea

- Physiological
- Hypothalamic
- Pituitary
- Ovarian
- Anatomical

Hypothalamo-Pituitary-Gonadal Axis



Physiological causes of amenorrhoea

- Pre – pubertal
- Constitutional delay
- Pregnancy
- Menopause

Hypothalamic causes of amenorrhoea

- Functional –
  - abnormal GnRH secretion
  - Eating disorders, 15% of anorexic patients had primary amenorrhoea
  - strenuous exercise physical or mental stress
  - Endocrine disorders – abnormal thyroid function
  - Metabolic disorders – galactosemia
  - Sarcoidosis
- Congenital
  - Kallman's syndrome –anosmia, midline facial defect, renal agenesis & neurologic deficiency

Pituitary causes of amenorrhoea

- GnRH receptor gene mutations – low FSH and oestradiol with high LH
- Hyperprolactinaema (prolactinoma, iatrogenic)
- Endocrine – Cushings
- Neoplasms – cranio-pharyngioma, hypothalamic tumours, germinoma
- Others-
  - empty sella syndrome,
  - infarct
  - haemochromatosis & sarcoidosis

Ovarian causes of amenorrhoea

- Gonadal dysgenesis –
  - Turner's (45, XO) loss of germinal cells, streak ovary, short stature, webbed neck, aortic coarctation (10%), renal abnormalities (45%)
  - 46 XX and 46 XY gonadal dysgenesis
- Premature ovarian failure .
  - FMR1 gene mutation with repeat CGG sequences (21%)
  - Autoimmune oophoritis (3-4%)
- Polycystic ovarian syndrome
  - Wide range of presentation
  - Ovarian dysfunction, androgen excess, ultrasound
  - Counsel about life style and diabetes
- Iatrogenic - surgery, chemo and radiotherapy.

Anatomical causes of amenorrhoea

- Congenital or anatomical abnormalities
  - Imperforate hymen
    - Cyclical pain, bluish membrane
    - Incision and drainage
  - Absent vagina or uterus
    - Mayer-Rokitanski-Kuster-Hauser (MRKH) syndrome (1:4500)
      - Partial or complete agenesis of Mullerian duct system
      - Aplasia of uterus and upper 2/3 of vagina
      - Renal vertebral and to a lesser extent auditory and cardiac defects
      - 46 XX
  - Testicular Feminising Syndrome/Androgen insensitivity syndrome
    - Genetically XY karyotype
    - Default differentiation of external genital structures to female phenotype
    - No Mullerian female development (no ovaries fallopian tubes uterus of upper vagina

Receptor and enzyme defects

- Congenital adrenal hyperplasia
  - 17 alpha-hydroxylase deficiency
  - Deficient cortisol, and adrenal and gonadal sex hormones
  - Excessive deoxycortisone
  - Normal male or female karyotype
- Vanishing testes syndrome
- Androgen insensitivity.
- Gonadotrophin resistance
- Aromatase deficiency

Management

- General Issues
  - Environment
  - Rapport and confidence building
  - Interpreter
  - Confidentiality
  - Health and sex education
- History and examination
- Red flag symptoms needing urgent attention include:
  - rapid virilisation – may be due to androgen-secreting tumours
  - hyperprolactinaemia – may be associated with intracranial tumours
- Investigation

Investigations

-
- Gonadotrophin
- Thyroid function
- Prolactin –
  - If >1000 refer to endocrinologist
  - And needs MRI
- Sex hormones
  - Testosterone – if > 5 nmol/l refer –
    - Androgen insensitivity, Androgen secreting tumours, Cushing's ;ate onset CAH.
  - Oestrogen –for secondary amenorrhoea
- Secondary amenorrhoea
  - SHBG
  - FAI
  - DHEAS
  - Adnrostenedione
- Imaging
  - TAS – primary
  - TVS
  - HSG, sonohysterography
  - MRI
- Karyotying

CLASSIFICATION BY HORMONE PROFILE

- Hypergonadotrophic hypogonadism (48.5%)
  - Chromosomal –
    - Abnormal chromosomes -Turner's 29.7% of all primary amenorrhoea
    - Normal chromosomes
- Hypogonadotrophic hypogonadism
  - Congenital :
    - Isolated GNRH deficiency (8%)
    - constitutional (6%),
    - Hypopituitarism congenital CNS defects
  - Endocrine:
    - CAH (0.8%),
    - Cushing's (0.4%),
    - hyperprolactinaemia (1.8%)
    - PCOS
  - Tumours
    - Craniopharyngioma (1.1%),
    - unclassified pituitary adenoma (0.8%),
    - malignancy

Treatment – amenorrhoea

- General
  - Life style changes - weight
  - Sexual health
- Specific
  - Anatomical
  - Prophylactic removal of gonads
  - Hormone replacement
  - Psychological support
  - Fertility issues

Menorrhagia - Definition

- Heavy (Abnormal) menstruation having adverse effect on quality of life
- Menorrhagia
  - Heavy bleeding or prolonged bleeding > 7days but regular
  - Blood loss =/>80 ml
- Polymenorrhoea
  - Frequent bleeding <21 day cycle
- Menometrorrhagia frequent and heavy
- Metrorrhagia – irregular loss
- Associations
  - Dysmenorrhoea
  - Dyspareunia
- Epidemiology
  - 33% describe HMB
  - 2nd commonest reason for referral to secondary care
  - 5% of women 30 – 49 presenting to GP

Causes of menorrhagia

- Dysfunctional
  - No pathology
  - Found in 40% – 60% of presentations
- Anovulatory.
  - Found in 20% of presentations
  - Usually at extremes of reproductive life.
- Local causes
  - Vulva & vagina
  - Cervix
  - Uterus
    - Endometrium
    - myometrium
- Systemic
  - Thyroid, liver , renal haematological disease
- Iatrogenic – IUCD, Progestagens

Management

- History and examination
- Investigations
  - FBC, Clotting
  - Thyroid function
  - Imaging
    - ET <12mm in premenopausal
    - <5 mm in post menopausal
  - Biopsy
    - Persistent IMB not responding to medical Rx
    - Age=/> 45 yrs
    - Risk factors for Ca.
- Hysteroscopy
  - Ambulatory or inpatient
  - Diagnostic with biopsy
  - Therapeutic polypectomy or fibroid resection
  - Coil removal
  - Division of septae or adhesions

Medical Management options

- Correct anaemia
- Non hormonal
  - Mefanemic acid – 25% reduction
  - Tranexamic acid – 50 % reduction
- Hormonal
  - Mirena
    - 16 -28% discontinuation
    - Up to 6 months to settle
  - Combined Hormone contraception
  - Progestagens.
  - GnRH analogues

Surgical Management options

- Endometrial ablation
  - First generation – TCRE/A.
  - 3rd generation: Novasure, Balloon thermal ablation, Microwave, Thermal hydroablation
  - Uterus < 10 weeks, Check caesarean section scar
- Myomectomy
  - Hysteroscopic
  - Laparoscopic or open
- Hysterectomy
  - Vaginal or laparoscopy vaginal assisted
  - Open or laparoscopic total or subtotal hysterectomy