Eating Disorders: Medical Complications and Treatment

Dr Helena du Toit

ST6 General Adult Psychiatry

South West London and St George's NHS Trust

Background:

- Specific set of psychological beliefs
- Abnormal eating habits or body weight
- Disruption of menstrual cycle (Omitted from DSM-V)

- AN: 2 subtypes – restrictive and binge/purge
  : maintain consistently low BMI
- BN: episodes of dietary restriction and binge/purge behaviours
  : maintain relatively normal or increased BMI

- SEED: Theander (1985) did a 33yr follow-up of his cohort
  :18% crude mortality rate; or 6 fold increase in standardized MR
  : most lethal of all psychological disorders
- Practice changes: more outpatient/day hospital treatment vs inpatient
  : best trials of treatment still show v. poor outcomes
  : increase in level of non-medical professionals/ self help Rx

Medical Complications in AN/BN:

- Many similarities to those seen in uncomplicated starvation
- Revert to normal on return to healthy diet & weight

- Differences: different areas of diet are deficient
  : protein and vitamin intake usually adequate
  : carbohydrates and fats usually severely deficient
  : excessive exercise and purging cause additional strain on the malnourished and stressed system

- Medical complications are described for each major organ system – affect the whole body

Cardiovascular Complications:

- AN: 87% suffer cardiac abnormalities at some stage of illness

- Bradycardia (<60bpm); 87% of pts; energy conserving < metabolic rate
- Hypotension (< 90/60mmHg); 85% of pts; chronic volume depletion
- Arrhythmias: electrolyte disturbances (↓ K, Mg, acid-base); purging/laxatives
- ECG: ST segment depression and U-waves – hypokalaemia, hypomagnesaemia
  : QTc prolongation – associated with rapid wt loss and sudden death
  : ECG changes are reversible, revert rapidly with electrolyte correction, nutrition and hydration
- Congestive cardiac failure: rapid refeeding; starvation induced ↓ Phos

- Rx: Regularly monitor BP (erect & supine), ECG, electrolytes – in all underweight AN sufferers and especially during refeeding or when purging

Gastrointestinal Complications:

- Perimylolysis: erosion of enamel and dentine on lingual surface of teeth
  : prolonged and frequent vomiting
  : heat/cold sensitivity; dental caries
- Benign parotid enlargement: 25% of BN; also in AN and other malnutrition

- Oesophagitis, erosions ulcers: exposure to gastric acid – induced vomiting
- Mallory Weiss tear: tear of oes. lining – vigorous vomiting
- Boerhaave's syndrome: rupture of oes. – vomiting after a meal, (binge)
- Delayed gastric emptying: feeling of fullness/bloating after eating; misinterpreted and due to deposition of fat

- Constipation: inadequate food intake; laxative/diuretic abuse
- Nutritional hepatitis: 1/3 pts; ↓ prot, ↑ LDH, ALP, lipids
- Rx: Refeeding!

Renal Complications

- Occur in up to 70% pts
- Reduced GFR and concentrating capacity - common
- AbN U&E: more common in those who vomit/laxatives/diuretics
- Most common: ↓ K, Na, chloride, metabolic alkalosis

- Severe hypophosphatemia: complication of refeeding

  : phosphorylation of glucose, protein synthesis

  - monitor for several days on refeeding; oral supplements if needed
- ↓ Mg with refractory ↓ Ca: 25% pts; Mg oral supplements; risk factor for renal calculi
- ↓ K nephropathy: due to prolonged diuretic/laxative abuse; ass. With chronic renal failure
- Pitting oedema: benign form in 20% pts (during refeeding); Severe form with marked purgation is those with ↓↓ low BMI; associated with shock, CVS collapse, renal infarction – urgent IV protein replacement

Haematological complications

- Pancytopenia: common, mild anaemia and thrombocytopenia in 1/3
  : leucopoenia in 2/3
- Red cells form 'spur cells'; reduce ESR
- Bone marrow: hypoplasia, fat depletion; ↑ mucopolysaccharide ground substance – possible increased infection risk
- Rx: Regular FBC; refeeding is treatment of choice; vigilance for infections

Skeletal Complications

- Osteopenia and Osteoporosis is common
- Severe spinal osteopenia in 50% subjects with severe AN
- Osteoporosis: present within 2 yrs of onset of illness

  : correlates with duration and BMI

  : risk for pathological fractures

  : fracture risk increases when bone density is < 1g/cm³

  : many AN exercise strenuously at densities < 0,5g/cm³

  - Important to highlight the risks

- Aetiology: low sex hormones; increased cortisol and IGF-1

  : increased mineral resorption over deposition

Endocrine complications

- Common: amenorrhoea used to be a diagnostic criterion
- Leptin: food restriction - rapid depletion of leptin levels prior to weight loss
- Low leptin concentration triggers physiological responses to starvation:-

  - cessation of menstruation and reproductive function

  - reduced thyroid function (T4 n/↓; T3↓; reverse T3↑)

  - increased secretion of cortisol and Growth Hormone (GH)

  - Reduced hepatic IGF-1 secretion

  - Results: mobilization of alternative energy stores and reduced growth related energy expenditure

- Leptin receptors are present in hypothalamus and ovaries
- Leptin levels rise dramatically on weight restoration and correlate with total body fat stores

Metabolic complications

- BMR: reduced despite N thyroid function - ? Energy saving

- ↑ cholesterol: 50% of AN pts – abnormal androgen metabolism
- Glucose metabolism: altered; partially due to reduced intestinal motility

- Impaired temperature regulation:
  - cold exposure – don't raise core temp/stabilize temp or shiver
  - heat exposure – absent/equivocal vasodilation and inappropriately ↑ temp

- Sleep: less deep; more disturbed; early morning waking; ↓ REM latency
  : similar to pattern seen in major depression
  : correlates with low BMI and resolves on wt. restoration

Dermatological and muscular complications

- Causes: malnutrition; self-induced vomiting; laxative/diuretic abuse

- Malnutrition: 'lanugo' – arms, legs, face, back; unknown cause; 1/3 AN pts
  : dry, thin scaly skin; reduced collagen content
- Hypercarotenaemia: 80% of AN pts (also in starvation of other causes)
  : ↑ dietary vit A; or altered absorption and metabolism

- Purpura: bone marrow aplasia, thrombocytopenia
  : raised intra-thoracic pressure from vomiting (petechial)

- Myopathy: proximal muscle weakness in common
  : EMG confirmed myopathy – severely ill; excessive exercise;
  vomiting/vegetarianism – undernutrition is key

Summary

- Medical complications of ED occur frequently, present significant threat to life

- Restrictive AN: immediate – starvation effects on CVS and kidneys
  - risk of arrhythmias and sudden death
  : longer term – rapid onset of bone loss → pathological fractures
- B/P AN: immediate CVS risk increased due to rapid and ↑ electrolyte shifts
  : longer term – dental & oesophageal erosions; chronic constipation

- Refeeding: high risk
  : pancreatitis; severe electrolyte disturbances; cardiac failure

- Rx: monitoring; refeeding (cautiously); supplement; check fluid status
  : SSRIs (fluoxetine) high dose - ? Reduce binge eating
  : antipsychotics - ? Reduce anxiety, reduce overvalued ideas