ANOREXIA AND BULIMIA

EATING DISORDERS HAVE BEEN DESCRIBED IN ALL AGE GROUPS, RACIAL GROUPS AND SOCIOECONOMIC CLASSES

HISTORY AND COMORBIDITIES:

- Anorexia is generally detected more easily than bulimia due to concurrent starvation and significant weight change ➔ in contrast, patients with bulimia often maintain a normal body weight
- Consider eating disorder in those with frequent dieting or preoccupation with weight or thinness
    - In those with frequent presentations for DKA
- Patients with eating disorders have higher rates of psychiatric comorbidities, including depression, affective disorders, anxiety disorders, obsessive-compulsive personality traits and substance abuse
- Among patients with anorexia, the lifetime risk of major depression approaches **80%**
- Eating disorders are risk factors for both attempted and completed suicide
    - Those with anorexia have been shown to have a 50-fold increased risk for completed suicide
    - SUICIDE IS ONE OF THE LEADING CAUSES OF DEATH FOR PATIENTS WITH ANOREXIA

CLINICAL FEATURES:

- Presenting complaints may be vague ➔ fatigue, generalised weakness, dizziness, confusion or nausea
- Caloric restriction results in STARVATION KETOSIS
- The hypothalamic-pituitary axis is affected by poor nutrition and results in hormonal disruption that may cause:
    - Amenorrhoea
    - Infertility
    - Osteopenia
    - Osteoporosis
        - Bone loss in anorexia is related to a combination of bone resorption from decreased oestrogen and decreased bone formation from malnourishment, especially poor calcium and vitamin D intake
        - These women are THREE TIMES MORE LIKELY TO DEVELOP A FRACTURE
    - Growth impairment
    - SICK EUTHYROID ➔ normal TSH and low or normal T3/T4
        - Bradycardia, orthostasis and hypothermia are commonly present but should not be treated with thyroid replacement in the absecnce of true thyroid pathology
- BRADYCARDIA ➔ often dramatic (HR to 20-30)

- Tachyarrhythmia, QTc interval prolongation, reduced contractility and cardiomyopathy
- Severe malnourishment may result in pericardial effusion
- REFEEDING SYNDROME:
    - Occurs in those with severe starvation or rapid weight loss after feeding is initiated
    - Characterised by:
        - Electrolyte anomalies ➔ HYPOPHOSPHATAEMIA, HYPOMAGNESAEMIA, HYPOKALAEMIA
        - Reduced cardiac contractility and oedema with increased risk of heart failure in first two weeks
- Think IPECAC TOXICITY ➔ myositis and cardiomyopathy
- Severe starvation ➔ respiratory muscle weakness and decreased ventilatory drive
- Chronic nutritional deficiencies may cause:
    - Peripheral neuropathy
    - Cortical atrophy
    - Seizures
    - Wernicke encephalopathy
    - Iron deficiency anaemia and leukopenia common
    - BONE MARROW SUPPRESSION WITH PANCYOPAENIA IN SEVERE CASES
- Significantly reduced gastric emptying and slowed GI motility
- REFRACTORY HYPOGLYCAEMIA MAY DEVELOP
- Dehydration and decreased GFR predispose to NEPHROLITHIASIS
- CUTANEOUS FINDINGS:
    - Dry skin and brittle nails, lanugo, stomatitis
- Summary of complications of restrictive eating disorders below
- COMPLICATIONS OF PURGING BEHAVIOURS:
    - Bingeing/purging also have severe physiologic effects
    - Electrolyte anomalies
    - Chronic vomiting characteristically causes hypokalaemia, hypochloraemia, metabolic alkalosis
    - Diuretic abuse may also cause hyponatraemia
    - Gastric acid can cause erosion of dental enamel and tooth decay
    - RUSSELL SIGN ➔ callous formation over the knuckles
    - Haematemesis related to Mallory-Weiss tears
        - Rare cases of gastric or oesophageal rupture, pneumothorax, pneumomediastinum and aspiration pneumonia
    - Acute pancreatitis
    - Compulsive exercise ➔ rhabdomyolysis
    - Summarised below

Table 286-1 Complications of Restrictive Eating Behaviors	
Cachexia	Impaired cell-mediated immunity
Loss of subcutaneous fat	Neurologic complications
Muscle wasting	Peripheral neuropathy
Hypothermia	Seizures
Pitting edema	Wernicke encephalopathy
Dehydration	Cortical atrophy
Starvation ketosis	Euthyroid sick syndrome
Growth retardation	Dermatologic complications
Osteopenia and fractures	Dry, brittle hair and nails
Primary or secondary amenorrhea	Lanugo
Cardiac complications	GI complications
Bradycardia	Delayed gastric emptying
Orthostatic hypotension	Fatty liver infiltration
Arrhythmia	Metabolic complications
Prolonged QT_c interval	Electrolyte abnormalities
Conduction abnormalities	Ketonuria
Mitral valve prolapse	Impaired glucose control
Pericardial effusion	
Bone marrow suppression	
Anemia	
Leukopenia	
Thrombocytopenia	

Table 286-2 Complications of Purging Behaviors
Dental erosion and caries
Parotid/submandibular gland hypertrophy
Palatal abrasions
Knuckle abrasions or callouses
Facial petechiae
Pharyngitis/esophagitis
Mallory-Weiss tears
Esophageal/gastric rupture (rare)
Intestinal atony
Pancreatitis
Dehydration
Electrolyte abnormalities
Vomiting—hypokalemia, hypochloremia
Laxatives/enemas—hypokalemia, hypocalcemia, hypomagnesemia, hypophosphatemia
Diuretics—hyponatremia, hypokalemia, hypochloremia
Acid-base disturbance
Vomiting—metabolic alkalosis
Laxatives—metabolic acidosis
Diuretics—metabolic alkalosis
Ipecac cardiomyopathy
Compulsive exercise complications
Rhabdomyolysis
Myoglobinuria
Stress fractures
Overuse syndromes

DIAGNOSIS:

- SEE BELOW FOR DSM CLASSIFICATION OF ANOREXIA, BULIMIA AND OTHER EATING DISORDERS

Table 286-3 *Diagnostic and Statistical Manual of Mental Disorders* Criteria for Diagnosis of Anorexia Nervosa
Refusal to maintain weight within a normal range for height and age (>15% below ideal body weight)
Fear of weight gain
Severe body image disturbance in which body image is the predominant measure of self worth with denial of the seriousness of the illness
In females, secondary amenorrhea for greater than three cycles or primary amenorrhea

Table 286-4 *Diagnostic and Statistical Manual of Mental Disorders* Criteria for Diagnosis of Bulimia Nervosa
Episodes of binge eating with a sense of loss of control.
Binge eating is followed by compensatory behavior of the purging type (self-induced vomiting, laxative abuse, diuretic abuse) or nonpurging type (excessive exercise, fasting, or strict diets).
Binges and the resulting compensatory behavior must occur a minimum of two times per week for 3 mo.
Dissatisfaction with body shape and weight.
Does not occur during episodes of anorexia nervosa.

Table 286-5 *Diagnostic and Statistical Manual of Mental Disorders* Definition of Eating Disorder Not Otherwise Specified
All criteria for anorexia except that the patient is still menstruating
All criteria for anorexia except normal weight
All criteria for bulimia but lower frequency or duration
Regular use of compensatory weight control measures after eating a small amount of food
Chewing/spitting out, but not swallowing, large amounts of food
Binge eating disorder (currently, a research diagnosis that is characterized by binge eating 2 d/wk for a 6-mo period with lack of control and distress over binging)[16]

- BASIC EVALUATION SHOULD INCLUDE:
  - FBC (looking for pancytopaenia, anaemia/leukopenia)
  - EUC/CMP
  - Pregnancy testing
  - BSL
  - ECG
  - Blood/urine ketones
  - Amylase, if elevated➔ relates to salivary origin in patients with recurrent vomiting

TREATMENT:

- Main aim is rehydration and identification and correction of electrolyte imbalances
- Aggressive refeeding SHOULD NOT BE UNDERTAKEN IN THE ACUTE SETTING
  - The maximum initial refeeding rates should be 30-40kcal/kg/day
  - Because the risk of refeeding syndrome is higher with parenteral nutrition, TPN should be avoided in patients with anorexia
- Guidelines for treatment of bulimia recommend combined CBT or other psychotherapy with antidepressant medication
- Anorexia is LESS RESPONSIVE TO PHARMACOTHERAPY and treatment requires a multidisciplinary approach (i.e. drugs should never be the mainstay of treatment, but are used for comorbid disorders, e.g. depression/OCD)

- Outcome studies of anorexia show ~50% have good outcomes, including weight gain and return of menses
    - 25% achieve some weight gain but experience relapses and 25% have poor outcomes
    - A follow up study of bulimia showed 30% still had features at ten years
    - Anorexia patients had a mortality rate at ten years of 6.6% with annual mortality rate of 0.56% per year with cause of death related to:
        - Medical complications (54%)
        - Suicide (27%)
        - Unknown cuases (19%)
    - Lethal medical complications include:
        - Starvation
        - Metabolic abnormalities
        - Cardiac dysfunction
        - Infection

DISPOSITION AND FOLLOW UP:

Table 286-6 Society for Adolescent Medicine Guidelines for Hospitalization
One or more of the following justify hospitalization for eating disorder patients:
Severe malnutrition (weight <75% average body weight for age, sex, and height)
Dehydration
Electrolyte disturbances (hypokalemia, hyponatremia, hypophosphatemia)
Cardiac dysrhythmia
Physiologic instability heart rate <50 beats/min, blood pressure <80/50 mm Hg, orthostatic hypotension, or hypothermia <35.6°C (96°F)
Arrested growth or development
Failure of outpatient treatment
Acute food refusal
Uncontrollable bingeing and purging
Acute medical complication of malnutrition (syncope, seizures, cardiac failure, pancreatitis, etc.)
Acute psychiatric emergencies (suicidal ideation, psychosis)
Comorbid diagnosis that interferes with the treatment of eating disorders (severe depression, obsessive-compulsive disorder, severe family dysfunction)

Table 286-7 American Psychiatric Association Guidelines for Hospitalization
Medical instability (significant bradycardia, hypotension, metabolic or electrolyte abnormality, dehydration, or evidence of organ compromise)
Suicidality
Weight <85% normal body weight or rapid decline despite outpatient or partial hospitalization treatment
Comorbid psychiatric conditions
Poorly motivated, cooperative only in highly structured environment

SPECIAL POPULATIONS:

- Pregnant women with eating disorders are at risk of adverse obstetric outcomes, including:
    - Higher rates of spontaneous abortion
    - Premature delivery
    - Low birth weight
- Assess for suicidality ➔ women with anorexia have 50-fold increased risk for completed suicide