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## ANOREXIA NERVOSA SAQ

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28 year old woman weighing 28 kg, with a known diagnosis of anorexia nervosa, presents with h/o fever diarrhoea and vomiting. She had discharged herself against medical advice 3 days prior to presentation.

1) What is the definition of Anorexia Nervosa and how does it differ from bulimia Nervosa (2 marks)

Anorexia Nervosa is a Life-threatening eating disorder characterized by self-starvation and excessive weight loss in context of a false perception of being overweight despite not being so.

Bulimia nervosa is a serious psychiatric illness characterised by recurrent binge-eating episodes (the consumption of abnormally large amounts of food in a short period of time), immediately followed by self-induced vomiting, fasting, over-exercising and/or the misuse of laxatives, enemas or diuretics.

[<https://www.eatingdisorders.org.au/eating-disorders-a-z/bulimia-nervosa/>]

2) List 4 diagnostic criteria for Anorexia, along with suitable examples where needed? (4 marks)

(DSM V criteria)

- Restriction of energy intake that leads to a low body weight, given the patient's age, sex, developmental trajectory, and physical health. (Body weight > 15% below expected or BMI < 17.5)
- Intense fear of gaining weight or becoming fat, or persistent behavior that prevents weight gain, despite being underweight.
- Body Image distortion

Amenorrhoea + other endocrine disorders etc removed from prior criteria. (however still present in Dunn and may be used by ACEM exam markers)

Her observations are provided:

Temp: 39.1 °C  
 HR: 142 Sinus Tachycardia  
 SBP: 65 mmHg  
 GCS: 15  
 SaO2: 100% on RA  
 RR: 24

3) State 4 bedside key investigations you would perform in the ED on this patient. Provide your rationale for each investigation (4 marks)

	Investigation	Rationale
1	BSL	To seek and treat hypoglycaemia
2	VBG	Check for dyselectrolytaemia, Particularly for potassium, Calcium, Sodium, acid base status (HypoK, HypoCal, HypoNat, HypoPhos)
3	ECG	Looking for signs of dyselectrolytaemia eg U waves, prolonged QT, Severe Bradycardia, AF
4	Urine Beta HCG	Check her pregnancy status

4) State 4 key laboratory investigations you would perform in the ED on this patient. Provide your rationale for each investigation (4 marks)

	Investigation	Rationale
1	FBE	Evaluate Anaemia and thrombocytopenia, and WCC
2	Electrolytes	Check for dyselectrolytaemia, Particularly for potassium, Calcium, Sodium, Magnesium & Phosphate
3	Urea Creatinine	To ascertain the renal function status
4	LFT	Check for hypo- albuminemia

Her FBE results are provided:

FBE	Today	3 days ago
Hb	77	105
WCC	1.5	5
Neutrophils	1.4	4
Lymphocytes	0.1	0.8
Platelets	30	103

5) List 4 important probable cause for this acute pancytopenia

1	Acute Bone Marrow necrosis secondary to severe malnutrition
2	Severe sepsis
3	Consumption Coagulopathy, eg DIC
4	Diluted sample

6) List 8 other indications for hospitalization in a patient with anorexia (8 marks)

1	Bradycardia – Day time <50/min, Night time <45/min (< 40 as per Dunn)
2	Hypotension – SBP <90mmHg, DBP<60mmHg
3	Temperature < 35 °C or > 38 °C
4	Symptomatic hypoglycaemia
5	K+ < 3mmol/L
6	Prolonged QTC
7	BMI < 17.5
8	Failure of outpatient therapy

You decide this patient requires admission to hospital.

7) List 4 short term medical, and 4 long term medical complications that may occur after. (8 marks)

	Short Term	Long Term
1	Hypophosphatasemia (hall mark of refeeding syndrome) - Progressive myopathy	Osteoporosis - fractures
2	Hypokalaemia - dysrhythmias	Cognitive Abnormalities due to loss of grey matter during starvation
3	Hypomagnesemia - dysrhythmias, seizure	Bone marrow necrosis from severe malnutrition
4	Acute Thiamine deficiency - Wernicke's encephalopathy	Mitral valve prolapse

Further blood results are provided

Na - 138 (135-145)	Ca - 1.82 (2.15-2.65)	INR - 1.8 (<1.3)
K - 3.2 (3.5-5.2)	Mg - 0.54 (0.60-1.10)	D Dimer - 2.39 (<0.50)
Cl - 105 (95-110)	P - <0.30 (0.75-1.50)	Fibrinogen - 4.4 (1.5-4.0)

8) List 6 key management steps for the above patient including any drugs required (6 marks):

1	Treat shock with 10-20ml/kg of Normal Saline, aim for SBP >90mmHg, urine output 0.5ml/kg/hour
2	Broad Spectrum Antibiotics to treat potential sepsis eg. Tazocin 4.5gm IV
3	Correct dyselectrolytemia – K, Ca, P & Mg replacement
4	Vitamin K - IV 10mg
5	IV Thiamine 300mgs followed by 100mg TDS orally
6	Urgent referral to ICU for admission and admit under General Medicine unit with Psychiatry input, monitor for refeeding syndrome

**EXTRA Potential Questions**

9) List five (8) examination findings that you would seek on examination for a patient. (8 marks)

1	Loss of subcutaneous fat – triceps fold, bicipital circumference
2	Hypotension – SBP <90mmHg, DBP<60mmHg
3	Bradycardia – Day time <50/min, Night time <45/min
4	Hair loss – Lanugo body hair
5	Temperature < 35 °C or > 38 °C
6	Breast atrophy
7	Enamel erosion due to effects of acid from induced vomiting
8	Dry skin

10) What principles of risk assessment need to be considered when deciding her treatment? (4 marks)

1	Current weight and BMI compared to ideal body weight
2	Current electrolyte status
3	Resting heart rate and postural change
4	Temperature < 35 °C

11) List 6 common physical symptoms that a patient with anorexia nervosa may present with to the ED. For each, list one potential underlying cause. (12 marks)

	Symptoms	Reasons
1	Chest pain	Cardiomyopathy
2	Palpitation	Dysrhythmias secondary to dyselectrolytemia
3	Fever or shock	Sepsis secondary to pancytopenia as a result of bone marrow suppression
4	Syncope	Hypoglycaemia, severe anaemia
5	Generalised weakness	Secondary to dyselectrolytemia particularly hypokalaemia, hypophosphataemia
6	Fractures	Secondary to osteopenia