Ashford and St. Peter's Hospitals NHS Foundation Trust

PAEDIATRIC GUIDELINE:

GUIDELINE FOR THE MANAGEMENT OF ANOREXIA NERVOSA / EATING DISORDER INCLUDING RISK ASSESSMENT

History

Issue	Date Issued	Brief Summary of Change	Author
1	November 2012		Dr. G Baksh
2	November 2017	• Pg 2 – electrolytes defined • Pg 3 – HR and BP switched • Pg 4- selenium added in investigations; point 5 under management in bold; • Pg 5- snacks to be completed in 20 mins; patient can be allowed off ward if compliant	Dr. G Baksh

Guideline Author	Dr. G Baksh
Department/Directorate	WH&PGum
Date of issue	November 2017
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Ratified by	PNQCG Committee
Audience	Staff managing paediatric patients

Section 1	Current Version is held on the Intranet	First ratified: Nov 12	Review date: Nov 22	Issue 2	Page 1of x

Ideally, there should be joint clinical management between the Paediatric team, Dieticians and the Eating Disorders Service.

ADMISSION CRITERIA:

One or more of the following:

- Rapid weight loss > 1kg/ week
- Weight for height (WFH) <75%, BMI < 2nd centile (WFH = actual BMI x 100)
  (50th centile for age BMI)
- Medically compromised, e.g. syncope, seizures, severe electrolyte imbalance, cardiac failure, arrhythmias etc.
- Severe dehydration
- Biochemical abnormalities – low K, Na, Ca, Mg, PO4, glucose, albumin
- Severe bradycardia (<50 b/min day, <45 b/min night)
- Hypotension (<80/50) mmHg)
- Hypothermia (<35˚C)
- Persistent vomiting/ bingeing/ purging
- Severely depressed and/ or suicidal ideation / acute psychosis
- Failure or poor response to outpatient treatment

SALIENT POINTS IN HISTORY:

- Duration of symptoms, rapidity of weight loss
- Early feeding history
- Restrictive diet, bingeing, purging, laxative/ diuretic abuse, excessive exercise
- Intake including fluids on good/bad days, urine output
- Feeling of hunger, fullness
- Fear of fat and/or weight gain / unhappy to eat to gain weight
- Suicidal ideation, deliberate self-harm/ overdose
- Co-morbid mental illness (Anxiety, Phobia, OCD, Depression)
- Menstrual history
- Sleep disturbance
- Relationships, school
- Family history of Eating Disorder or Mental Illness
- History to elicit complications
- History to rule out other conditions e.g. Hyperthyroidism, Diabetes Mellitus, Malignancy, Infection, IBD, Coeliac Disease, Autoimmune Disorders etc

SALIENT POINTS ON EXAMINATION:

- Weight, height, BMI, WFH
- Temperature, hydration, lying and standing HR and BP **(>20 b/min,>10 mmHg drop is a concern)**
- Oversized clothes, decreased subcutaneous fat and muscle mass
- Note pubertal status
- Blue peripheries
- Bradycardia, hypotension, arrhythmia, murmur
- Alopecia, Lanugo hair
- Peripheral oedema
- Abdominal bloating / tenderness

SUSS Test –Sit Up Squat Stand

Sit up

The patient is asked to sit up from lying supine on a flat surface without using the hands, if possible.

Squat

The patient is asked to squat and to rise without using the hands, if possible.

Rating

The scale used for rating both squatting and sitting is as follows:

0 completely unable to rise
1 able to rise only with use of hands
2 able to rise with noticeable difficulty
3 able to rise without difficulty.

- **Signs of bingeing/purging**: Russells' sign (callous on back of hand from induced vomiting), dental erosions, palatal petechiae / scratches, parotitis
- **Signs of vitamin and mineral deficiency:** Anaemia, bruises, glossitis, bleeding gums, hypercarotenemia (yellow skin + white conjunctiva), Chvostek's (↓Mg), Trousseau's sign (↓Ca)
- **Look for signs of Deliberate Self Harm**
- **Think of other conditions if:** Enlarged thyroid, hepatosplenomegaly, lymphadenopathy
- Assess risk (see Risk Assessment Framework)

SALIENT POINTS ON INVESTIGATION at first presentation:*

- FBC + film, Clotting levels, ESR/CRP

- U+Es, LFTs, Amylase, Lipid Profile(Hypercholesterolaemia), Glucose
- Calcium (ionized), Magnesium, Phosphate, (Selenium and Zinc if very ill)
- Ferritin, Iron studies, Vit D, Folate, B12,
- TFTs (Sick Euthyroid Syndrome)
- VBG (Hypochloraemic alkalosis with bingeing/ purging, metabolic acidosis with laxative abuse)
- Coeliac screen, Igs
- ECG (prolonged QTc interval >450 ms, bradycardia)
- Urinalysis – proteinuria, haematuria, glucose, ketones
- Consider: β HcG/ urine pregnancy test (if persistent vomiting), autoimmune screen etc if criteria for Eating Disorder not fulfilled
- Pelvic ultrasound if not recently performed

If patient already screened, baseline investigations required : FBC, U+Es, Glucose, LFTs. Ca, PO4, Mg, VBG, urine and ECG

***MANAGEMENT (Refer to GUIDANCE FOR WARD MANAGEMENT OF PATIENTS ADMITTED WITH KNOWN OR SUSPECTED ANOREXIA NERVOSA for more details)**

- Joint with EDS and Dietician
- Manage in open bay – **DO NOT ISOLATE**
- Print out Appendix 1 from Guidance for Ward Management of Patients Admitted with Known or Suspected AN and share management expectations with patients and parents
- Strict bed rest for all patients initially– use commode. This may be liberalized based on their progress
- Strict input and output chart
- **Most patients will have cool peripheries, prolonged CRT and bradycardia** (as Basal Metabolic rate may be decreased by 25%) **and will not require fluid boluses which can be dangerous** and may result in pulmonary oedema and/or cardiac failure due to sudden strain on the cardiac muscle
- If patient has a prolonged CRT and a "**normal HR"** or tachycardic they may be hypovolaemic. First offer oral fluids at 10 ml/kg over 1 hour in the form of Diarolyte. If oral fluids are refused, offer same volume via NGT. **Only give a bolus of 0.9% Saline over 1 hour if patient refuses fluids via alternative routes and is very dehydrated**. Once the bolus is given via any route this should then be followed by further **oral** intake. Subtract fluid given from total daily fluid requirement (6-8 glasses of fluid are required daily for healthy functioning 120 – 150 ml glasses for younger children and 250 – 300 ml glasses for teenagers) – see below for further guidance on normal fluid requirements and dehydration*
- Observations at least 6 hourly including blood glucose

- If patient is hypoglycaemic (BSL ≤2.6 mmol/l) then offer Glucogel followed by **oral** intake, with frequent BSL checks. Offering continuous iv fluids is counterproductive as it avoids the feeding management and may result in cardiac failure due to sudden strain on the cardiac muscle if large volumes are suddenly administered
- Twice weekly weights – aim for 1 kg increase per week
- **Remember FOOD = MEDICINE therefore all intake must be supervised and documented**
- Encourage to use commode before meals
- Assess whether at risk of Refeeding Syndrome (intake of < 500kcal/dy for > 5 consecutive days).
- **Remember Refeeding Syndrome can have cardiac, neurological, haematological complications (Phosphate shifts) and strict protocol must be followed***(see Refeeding Guideline hyperlink)
- If at risk of refeeding, subtract the calories from the Glucogel from total daily requirement.
- Allow 30 minutes for meal and 20 minutes for snack and replace food or fluid dropped or hidden
- Do not allow patient to visit bathroom for 1 hour following meals (if not on strict bed rest).
- If patient refuses to eat or drink (see Feeding Against Consent hyperlink)
- Treat bacterial infections aggressively
- If laxatives are required avoid stimulants
- In some cases patient can be allowed a short supervised time off the ward if compliant with meal plan and agreed by management team
- Aim to transfer to Inpatient Unit (via EDS) if not compliant once **medically** stable

See below hyperlinks for Eating disorder pathways:(Eating Disorders Pathway: Patient with Anorexia Nervosa with Medical Compromise / in Crisis)

Guidance : Risk Assessment Framework for young people with Eating Disorders (Junior MARSIPAN Jan12)

	Red (severly high risk)	Amber (high risk)	Green (moderate risk)	Blue (low risk)
BMI and Weight For Height	WFH <70% (approx. below 0.4th BMI centile)	WFH 70–80% (approx. between 2nd and 0.4th BMI centile)	WFH 80–85% (approx. 9th–2nd BMI centile)	WFH >85% (approx. above 9th BMI centile)
	Recent loss of	Recent loss of weight of 500– 999	Recent weight	No weight loss over 2

	weight of 1 kg or more/week for 2 consecutive weeks	g/week for 2 consecutive weeks	loss of up to 500 g/week for 2 consecutive weeks	weeks
CVS Health	Heart rate (awake)<40 bpm	Heart rate (awake) 40–50 bpm	Heart rate (awake) 50– 60 bpm	Heart rate (awake) >60 bpm
		Sitting blood pressure: systolic <0.4th centile (84–98 mmHg depending on age and gender); diastolic <0.4th centile (35–40 mmHg depending on age and gender)	Sitting blood pressure: systolic <2nd centile (98–105 mmHg depending on age and gender); diastolic <2nd centile (40–45 mmHg depending on age and gender)	Normal sitting blood pressure for age and gender with reference to centile charts
		Occasional syncope; moderate orthostatic cardiovascular changes (fall in systolic blood pressure of 15 mmHg or more, or diastolic blood pressure fall of 10 mmHg or more within 3 min standing, or increase in heart rate of up to 30 bpm)	Pre-syncopal symptoms but normal orthostatic cardiovascular changes	Normal orthostatic cardiovascular changes
			Cool peripheries; prolonged peripheral capillary refill time (normal central capillary refill time)	
	History of recurrent syncope; marked orthostatic changes (fall in systolic blood pressure of 20 mmHg or more, or below 0.4th– 2nd centiles for age, or increase in heart rate of >30 bpm)			
	Irregular heart rhythm (does not include sinus			Normal heart rhythm

	arrhythmia)			
ECG abnormalities	QTc>460 ms (girls) or 400 ms (boys) with evidence of bradyarrhythmia or tachyarrhythmia (excludes sinus bradycardia and sinus arrhythmia); ECG evidence of biochemical abnormality	QTc>460 ms (girls) or 400 ms (boys)	QTc<460 ms (girls) or 400 ms (boys) and taking medication known to prolong QTc interval, family history of prolonged QTc or sensorineural deafness	QTc<460 ms (girls) or 400 ms (boys)
Hydration Status	Fluid refusal Severe dehydration (10%): reduced urine output, dry mouth, decreased skin turgor, sunken eyes, tachypnoea, tachycardiac	Severe fluid restriction Moderate dehydration (5–10%): reduced urine output, dry mouth, normal skin turgor, some tachypnoea, some tachycardia,c peripheral oedema	Fluid restriction Mild dehydration (<5%): may have dry mouth or not clinically dehydrated but with concerns about risk of dehydration with negative fluid balance	Not clinically dehydrated
Temperature	<35.5°C tympanic or 35.0°C axillary	<36°C		
Biochemical abnormalities	Hypophosphataemia, hypokalaemia, hypoalbuminaemia, hypoglycaemia, hyponatraemia, hypocalcaemia	Hypophosphataemia, hypokalaemia, hyponatraemia, hypocalcaemia		
Disordered eating behaviours	Acute food refusal or estimated calorie intake 400–600 kcal per day	Severe restriction (less than 50% of required intake), vomiting, purging with laxatives	Moderate restriction, bingeing	
Engagement with management plan	Violent when parents try to limit behaviour or encourage food/fluid intake, parental violence in relation to feeding (hitting, force feeding)	Poor insight into eating problems, lacks motivation to tackle eating problems, resistance to changes required to gain weight, parents unable to implement meal plan advice given by healthcare providers	Some insight into eating problems, some motivation to tackle eating problems, ambivalent towards changes required to gain weight but not	Some insight into eating problems, motivated to tackle eating problems, ambivalence towards changes required to gain weight not apparent in behaviou

			actively resisting	
Activity and exercise	High levels of uncontrolled exercise in the context of malnutrition (>2 h/day)	Moderate levels of uncontrolled exercise in the context of malnutrition (>1 h/day)	Mild levels of uncontrolled exercise in the context of malnutrition (<1 h/day)	No uncontrolled exercise
Self-harm and suicide	Self-poisoning, suicidal ideas with moderate to high risk of completed suicide	Cutting or similar behaviours, suicidal ideas with low risk of completed suicide		
Other mental health diagnoses		Other major psychiatric codiagnosis, e.g. OCD, psychosis, depression		
Muscular weakness – SUSS Test:				
Sit up from lying flat	Unable to sit up at all from lying flat (score 0)	Unable to sit up without using upper limbs (score 1)	Unable to sit up without noticeable difficulty (score 2)	Sits up from lying flat without any difficulty (score 3)
Stand up from squat	Unable to get up at all from squatting (score 0)	Unable to get up without using upper limbs (score 1)	Unable to get up without noticeable difficulty (score 2)	Stands up from squat without any difficulty (score 3)
Other	Confusion and delirium, acute pancreatitis, gastric or oesophageal rupture	Mallory–Weiss tear, gastrooesophageal reflux or gastritis, pressure sores	Poor attention and concentration	

[x]British Nutrition Foundation- Nutrition Bulletin- Hydration and health: a review B. Benelam, L. Wynes. Vol 35 Iss 1 March 2010, pgs 3-25

- Body water is controlled under normal circumstances and fluctuates by < 1%/dy.
- Dehydration is defined as ≥ 1% loss of body mass (assuming no food restriction).
- Loss of body mass of approximately 1% occurs after 13 hours of fluid restriction, 2% after 24 hours, 3% after 37 hours.
- Mild dehydration is defined as 1-2% body mass loss.
- ≥ 2% body mass loss can result in impaired cognition (Ritz and Berrit 2005).

European Food safety Authority 2008

- 6-8 glasses of fluid are required daily for healthy functioning
- 120 – 150 ml glasses for younger children and 250 – 300 ml glasses for teenagers
- On average males and females 4 -8 years old require 1.6 l/dy
- Males 9 – 13 years 2.1 l/dy
- Females 9 – 13 years 1.9 l/dy
- Males > 14 years 2.5 l/dy
- Females > 14 years 2.0 l/dy

References:

1.Junior MARSIPAN: Management of Really Sick patients under 18 with Anorexia Nervosa, January 2012. (www.rcpsych.ac.uk/foles/pdfversion/CR168.pdf)
2.NICE guideline CG9 Jan 04: http://guidance.nice.org.uk/CG9
3.NICE guideline NG69 May 17: http://guidance.nice.org.uk/NG69