PAEDIATRIC GASTROENTEROLOGY

TOP 10 CONDITIONS

A Guide to Primary Care Investigations and Referral Considerations

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1. CHRONIC / FUNCTIONAL CONSTIPATION

Assessment by GP

- Distinguish between constipation and withholding (non-retentive faecal incontinence)
- History and examination to exclude red flags*
- Exclude psychosocial factors if any, including risk assessment for maltreatment
- Assess for faecal impaction before commencing treatment

Management options by GP

- Trial of disimpaction/maintenance as indicated as per RCH guidelines
- Consider bloods to exclude medical causes-to include coeliac screen, TFTs and Calcium levels
- Consider referral and ongoing support by continence nurse, if available

When to Refer

- Presence of red flags*
- Symptoms refractory to treatment for more than 6 weeks
- Suspicion of non-retentive faecal incontinence

Role of Gastroenterologist:

- Consider other investigations (such as anorectal manometry, colonic transit studies) to distinguish between slow transit and outlet obstruction and tailor further management accordingly
- Exclude Hirschsprung's disease as cause
- Consider dietary interventions in select patients
- Consider stimulants or other novel colonic prokinetics
- Consider and work-up towards possible surgical interventions in severe cases refractory to all medical management.

Red flags: History:

- Blood in stools
- Systemic symptoms- faltering growth, weight loss, lethargy
- Extra intestinal symptoms- rashes, arthritis, sore eyes, mouth ulcers
- Delayed passage of meconium, ribbon like stools
- Urinary symptoms

Red flags: Examination:

- Abnormal lower limb neurology
- Patulous anus
- Absent perianal sensation
- Perianal disease

2. CHRONIC / RECURRENT ABDOMINAL PAIN

Assessment by GP

- History and examination to exclude red flags*
- Exclude psychosocial factors if any
- Assess for constipation
- Dietary history

Management options by GP

- Trial of Movicol if indicated
- Urine MSU / stool infection screen if indicated
- Food diary**
- Consider bloods to exclude medical causes-to include coeliac screen, inflammatory markers (CRP, ESR)

When to Refer

- Presence of red flags*
- Symptoms > 6 weeks with no identifiable triggers

Role of Gastroenterologist:

- Consider other investigations including breath tests, stool tests, imaging, gastroscopy and/or colonoscopy
- Consider disorders of the gut brain interaction (DGBI) as a cause and manage accordingly

**Can use apps like Bowelle or mySymptoms Food Diary

Red flags: History:

- Less than 5 years old
- Altered bowel habits
- Growth disturbances (Weight loss, pubertal delay)
- Associated dysphagia or retrosternal pain
- Nocturnal episodes, waking up from sleep
- Radiation of pain, localized away from midline
- Incontinence of stool or urine
- Systemic symptoms
- Chronicity / Missed school

Red flags: Examination:

- Fever
- Mouth ulcers, perianal disease
- Palpable abdominal mass
- hepatosplenomegaly

3. FAILURE TO THRIVE / INFANT FEEDING PROBLEMS

Assessment by GP

- History and examination to exclude red flags signs and symptoms suggestive of an organic cause*
- Dietary history to assess adequate calorie intake
- Assess for excessive loss e.g. chronic diarrhea
- Assess for excessive consumption of calories e.g. chronic illness, heart murmur etc
- Assess for possible underlying emotional or psychosocial issues

Management options by GP

- Dietician input to optimize nutrition/catch up growth
- Urine MSU / stool infection screen if indicated
- Consider bloods to exclude medical causes-to include coeliac screen, inflammatory markers (CRP, ESR), nutritional bloods inc. iron studies, Vit D, B12 & folate

When to Refer

- Suboptimal weight gain despite good calorie intake
- Suspected underlying medical issues or red flags*

Role of Gastroenterologist:

- Consider other investigations including gastroscopy and/or colonoscopy to assess for mucosal/absorption issues
- Consider collaborative work-up with immunology /metabolic /allergy /genetics teams as indicated
- Consider multidisciplinary input and need for hospitalization for observed feeding, nutritional rehabilitation and monitoring for refeeding syndrome
- Assess the need for nasogastric feeding or parenteral nutrition in severe cases
- Long term surveillance to ensure optimal growth and cognitive development

Signs and symptoms of underlying medical cause:

- Physical examination findings suggestive of Congenital heart disease, heart failure such as heart murmur, edema etc
- Developmental delays
- Dysmorphic features
- Organomegaly or lymphadenopathy
- Recurrent infections
- Chronic diarrhea, vomiting
- Wasting
- Poor parent-child interaction

4. GASTRO OESOPHAGEAL REFLUX / CHRONIC VOMITTING

Assessment by GP

- History, examination and growth assessment
- Assess for alarm symptoms*

Management options by GP

- Lifestyle Modifications
  - **Infants:** smaller, more frequent feeds, burping, upright position after feeds, thickeners
  - **Older children:** Upright position, weight loss, early dinner 2-3 hours before sleep, avoid specific food triggers, exposure to tobacco smoke.
- Consider trial of anti-reflux medication (PPI) for 4-6 weeks

When to Refer

- Presence of alarm symptoms
- Suboptimal weight gain / failure to thrive
- Refractory GORD
- Food refusal/prolonged feeding
- Associated co-morbidities such as neurodevelopmental disorders, prematurity etc.

Role of Gastroenterologist:

- Consider other investigations including pH study, barium studies, gastroscopy to look for anatomical and mucosal causes, including complications (such as ulcerative esophagitis, Barrett's esophagus etc.)
- Consider disorders of the gut brain interaction (DGBI) as a cause and manage accordingly
- Assess need for surgical intervention (fundoplication) in severe cases

***Alarm symptoms:**

- dysphagia
- odynophagia (painful swallowing)
- haematemesis
- weight loss

5. SUSPECTED COW'S MILK PROTEIN ALLERGY

Assessment by GP

- History, examination and growth assessment
- Check for blood in stools
- Consider lactose intolerance as a possibility

Management options by GP

- Trial of extensively hydrolyzed formula in infants
- Dietician referral
- Refer to ASCIA website* for milk alternatives, dietary avoidance, calcium supplantation etc.

When to Refer

- Suboptimal weight gain / failure to thrive
- Food refusal/prolonged feeding
- Persistence of symptoms despite exclusion

Role of Gastroenterologist:

- Consider other investigations including gastroscopy, colonoscopy/sigmoidoscopy to exclude other causes
- Consider amino acid-based formula in severe cases

ascia

*AASCIA (Australasian Society of Clinical Immunology and Allergy)

https://www.allergy.org.au/patients/food-allergy/ascia-dietary-avoidance-for-food-allergy/cows-milk-dairy

Practice points in management of suspected CMPA:

- Partially hydrolyzed formulas are not recommended in suspected CMPA, Extensively hydrolyzed formulas (EHF) is the first choice.
- EHF is not suitable in babies who had anaphylaxis to cow's milk (only amino-acid formula)
- Soy milk is recommended only above 6 months of age, but may have cross reactivity
- Rice protein-based milk is an alternative, but not in babies with known FPIES to rice
- Lactose free milk, Goat's milk, Sheep's milk, Camel's milk and A2 milk are NOT suitable
- Babies must have dietician input by 12 months of age to assess their nutritional requirements, and help with Milk Ladder (reintroduction)
- Reassure that over 80% will outgrow this by 3-5 year age

6. SUSPECTED COELIAC DISEASE

Assessment by GP

- History, examination and growth assessment
- Identify need for screening on the basis of signs and symptoms* OR, high risk associations**
- Screening bloods including coeliac serology- to include FBC, LFTs, TTG IgA, Iron studies with total IgA levels

Management options by GP

- Refer all suspected with coeliac to Gastroenterologist for confirmation of diagnosis
- To remain on gluten containing diet until reviewed by gastroenterologist
- Consider gluten challenge at referral if already on gluten free diet (to be seen within 6 weeks)

When to Refer

- Positive coeliac screen
- Significant weight loss, iron deficiency anemia
- Symptoms strongly suggestive of the condition (despite negative serology)
- Strong family history/history of other autoimmune conditions

Role of Gastroenterologist:

- Consider diagnostic pathways including endoscopic and/or non-endoscopic confirmation (as per ESPGHAN 2020 criteria)
- Consider suitability of doing coeliac susceptibility genotypes (HLA DQ2 & DQ8), and/or Anti-endomysial antibody; on a case-by-case basis
- Coeliac education and dietetic input
- Ongoing monitoring and periodic surveillance for other autoimmune conditions

***Symptoms and signs of Coeliac disease:**

- Chronic GI symptoms such as diarrhoea, constipation, abdominal pain, bloating etc
- Prolonged fatigue ("feels tired all the time")
- Chronic iron deficiency anaemia
- Suboptimal growth or unexpected weight loss
- Dental enamel defects, mouth ulcers
- Abnormal liver function tests

****High Risk Associations:**

- Family history
- Autoimmune thyroid disease
- Type 1 diabetes
- Other autoimmune diseases
- Dermatitis herpatiformis
- Down's syndrome
- Turner's syndrome

7. SUSPECTED EOSINOPHILIC OESOPHAGITIS

Assessment by GP

- History- abdominal or retrosternal pain, food bolus obstruction, "food getting stuck in throat/chest"- regurgitation, vomiting, dysphagia, odynophagia.
- Food refusal in younger children
- Atopic history (allergy, eczema, asthma)
- Family history of EoE

Management options by GP

- Refer to Gastroenterologist for confirmation of diagnosis & further dietary or drug management
- Consider starting trial of PPIs if delay in seeing gastroenterologist

When to Refer:

- Suggestive history as above
- Significant weight loss, severe symptoms
- Mild symptoms with strong atopic history

Role of Gastroenterologist:

- Endoscopic confirmation and distinguishing EoE from Reflux Oesophagitis and PPI-REE (PPI responsive esophageal eosinophilia)
- Determine the need for dietary interventions or medications depending on the severity
- Parent education and dietetic input with follow up endoscopies to monitor for histological remission/response to treatment

An upper GI endoscopy and histology
is the only way to diagnose and monitor this condition

8. CHRONIC DIARRHOEA (OVER 2 WEEKS)

Assessment by GP

- Assess for dehydration
- Detailed history including onset, dietary history, travel, medications, family history of GI conditions
- Think IBD, coeliac; with a view to exclude

Management Options by GP

- Consider blood tests including FBC, UEC, LFTs, CRP, ESR, Coeliac screen, TFTs, Iron studies, immunoglobulins.
- Consider faecal calprotectin in >4 years
- Stool for infective causes
- Consider dietary interventions if malabsorption strongly suspected

When to Refer

- Significant weight loss, severe symptoms
- Unexplained protracted diarrhea

Role of Gastroenterologist:

- Further specialist investigations including stool tests to delineate between osmotic and secretory diarrhea
- Consider investigating for carbohydrate, fat or protein malabsorption as clinically indicated
- Targeted dietary interventions
- Determine need for endoscopy and biopsy in protracted cases

Common Causes:

- GI infections
- Toddler's diarrhoea
- Food allergies & intolerances
- Coeliac disease
- Lactose intolerance
- Dietary fructose intolerance
- IBD

9. GI BLEED- HAEMATEMESIS, MALENA, HAEMATOCHEZIA

Assessment by GP

- Assess for hemodynamic stability and need for ED presentation
- Detailed history including history of GOR, longstanding constipation (causing anal fissures), family history of significant GI conditions.
- Think IBD & look for other suggestive signs and symptoms
- Look for signs of chronic liver disease (variceal bleed)

Management options by GP

- Consider blood tests including FBC, UEC, LFTs, Clotting studies, CRP, ESR, Coeliac screen, TFTs, Iron studies, immunoglobulins.
- Consider faecal calprotectin in >4 years with rectal bleeds
- Stool for infective causes in rectal bleeds
- Consider empirical treatment for CMPA / constipation if clinically suspected

When to Refer

- All upper GI bleeds.
- All rectal bleeds (non-responsive to empirical treatment as above)
- Family history of significant GI conditions (Eg. IBD, polyps)

Role of Gastroenterologist:

- Gastroscopy / Colonoscopy with biopsies as indicated
- Consider other investigations such as Meckels scan etc.
- Further management based on identified cause

Common Causes of paediatric GI bleed:

- GI infections
- Constipation
- Food allergies
- Meckel's diverticulum
- Ulcers eg. related to H pylori infection
- Erosive gastritis
- Polyps
- IBD

10. SUSPECTED IBD (CROHN's, ULCERATIVE COLITIS)

Assessment by GP

- Detailed history and examination, including family history, travel history
- Look for extra intestinal manifestations*

Management options by GP

- Bloods including FBC, UEC, LFTs, CRP, ESR, Coeliac screen, TFTs, Iron studies.
- Faecal calprotectin in >4 years
- Stool for infective causes

When to Refer

- Refer all suspected IBDs urgently, especially if evidence of anemia, hypolbuminemia, weight loss
- Raised Faecal Calprotectin

Role of Gastroenterologist:

- Gastroscopy / Colonoscopy with biopsies as indicated
- Further education and ongoing multidisciplinary management following confirmation of diagnosis
- Long term follow-up and surveillance endoscopies, including management of flares

GI symptoms:

- Chronic abdominal pain
- Blood in stools
- Diarrhea/ altered bowel motions
- Decreased appetite
- Weight loss
- Mouth ulcers
- Hepatobiliary manifestations:
  - Primary sclerosing cholangitis
  - Autoimmune hepatitis

***Extra intestinal manifestations:**

- Fever
- Chronic fatigue
- Suboptimal growth
- Peripheral arthropathy
- Erythema nodosum
- Pyoderma gangrenosum
- Uveitis, Episcleritis
- Anaemia, portal vein thrombosis
- Sweet syndrome

11. SUSPECTED LIVER DISEASE

Assessment by GP

- Detailed history and examination, including onset, duration, ethnicity, medication history, travel history
- Look out for obesity, metabolic syndrome
- Signs of chronic liver disease

Management options by GP

- Bloods including FBC, UEC, LFTs (including conjugated fraction of bilirubin), Coeliac screen, Blood glucose, Insulin levels, IGF1, Coagulation studies
- Abdominal ultrasound
- In older children- consider liver panel * and refer

When to Refer

- Persistently abnormal LFTs with no identifiable cause
- All neonates/infants with jaundice not already investigated by a specialist (and diagnosed physiological/breast milk jaundice by the specialist)
- All neonates / infants with deranged LFTS
- Older children with jaundice/deranged LFTs except for viral hepatitis (can be referred to Infectious Diseases team)
- If strongly suspicious of biliary atresia in less than 3 month infants (deranged LFTs, jaundice, pale acholic stools) refer urgently to Gastroenterology PCH for confirmatory work-up and surgical management

Role of Gastroenterologist:

- Further liver investigations / imaging as clinically indicated
- Determine need for liver biopsy
- Parent education and tailored management as necessary

*Liver Panel: Hepatitis Serology (A, B, C) EBV, CMV, Adenovirus, Enterovirus, HHV6; Autoimmune markers- ANA, SMA, LKM1 ; Copper, ceruloplasmin, Alpha 1 antitrypsin phenotype, immunoglobulins, Lipid profile, CK, LDH, Ammonia and Lactate.

Questions ?