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PROFESSIONAL GUIDELINE
EXECUTIVE SUMMARY

UK evidence-based practice guidelines for the dietetic management of irritable bowel syndrome (IBS) in adults

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Executive summary

Purpose of guideline

These guidelines have been developed for UK based registered dietitians who provide dietary treatment for adults with irritable bowel syndrome (IBS). The recommendations aim to reduce variation in clinical practice improving patient outcomes in relation to dietary management.

Aim

To provide up-to-date evidence-based practice guidelines for the dietetic management of IBS in adults to UK based dietitians.

Methods

A guideline development group was formed and identified five topics to be of utmost importance to improve patient outcomes in the dietetic care pathway for IBS. The following key questions were developed:

(i) What is the effectiveness of removing milk and dairy products to improve IBS symptoms?

(ii) Which type of dietary fibre improves IBS symptoms?

(iii) Does an increase or decrease in the intake of fermentable carbohydrates reduce abdominal bloating in IBS?

(iv) Do UK available probiotics improve IBS symptoms?

(v) What is the evidence for using elimination or empirical diets to improve IBS symptoms?

A comprehensive literature search was carried out and evidence statements, recommendations, good practice points and research recommendations were developed. Details of the evidence examined and consultation process are presented.

Results

A dietetic care pathway was produced following a logical sequence of treatment and forms the basis of these guidelines. Three lines of dietary management were identified.

<u>First line</u>

- Clinical and dietary assessment
- Healthy eating and lifestyle management

<u>Second line</u>

- Advanced dietary interventions to improve symptoms
- Probiotics

<u>Third line</u>

- Elimination and empirical diets

Research recommendations were also identified relating to the need for adequately powered and well designed randomised controlled trials.

Conclusions

These guidelines provide details of how to achieve successful dietary management of IBS across the UK.

Recommendations and good practice points

See Appendix A for SIGN 50 recommendation grades. Dietitians should use their clinical judgement and consult with patients when applying the recommendations.

First line

General considerations

1. Prior to providing dietary advice to individuals with IBS, it is important to review which investigations have been carried out and, in particular, ensure coeliac disease has been ruled out. Recent guidelines for the management of IBS in primary care (NICE, 2008) indicate that the following tests should be undertaken to rule out 'red flags' and should be normal:
   - Full blood count (FBC)
   - Erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP)
   - Coeliac antibodies (endomysial antibodies [EMA] or tissue transglutaminase [TTG])

   NB: Coeliac disease should be ruled out with negative coeliac antibodies and, where necessary, a gastroscopy with duodenal (D2) biopsies should be carried out. Check that coeliac screening was carried out while the individual was taking gluten in the diet in more than one meal every day for at least 6 weeks before testing (NICE, 2009). If coeliac antibodies have not been checked, request tests prior to making any dietary changes to gluten intake.

   The following tests are not necessary to confirm a diagnosis of IBS but they may have been carried out and, if so, they should be normal:
   - Ultrasound (abdomen/pelvis)
   - Endoscopy including (gastroscopy, capsule, colonoscopy, sigmoidoscopy)
   - Faecal calprotectin (inflammatory marker – not routinely available)
   - Barium enema
   - Thyroid function test
   - Faecal pathogens (including ova and parasite test)
   - Faecal occult blood
   - Haematinics (ferritin, iron, folate, vitamin B12)

   People with IBS symptoms aged over 60 years are considered as a red flag in the NICE IBS guidelines (NICE, 2008) so ensure other causes of abdominal symptoms have been ruled out in this age group.

   Hydrogen breath tests (e.g. lactose, fructose, lactulose) are not routinely available across the UK. Where they are available, results may help to identify which dietary management strategy is most appropriate.
2. Prior to the first appointment it may be useful to ask individuals to keep a food and symptom diary.
3. Discuss IBS diagnosis and ensure that individuals understand that it is a positive diagnosis. NB: Sometimes using 'IBS' as a diagnosis is not well accepted by individuals. This may be due to numerous 'negative' investigations having been carried out with no definitive diagnostic test and associating the term 'IBS' with a cast aside diagnosis. IBS is one of the functional bowel disorders (Longstreth et al., 2006) and many clinicians use the term 'functional bowel disorder' rather than IBS.
4. Some people find it difficult to talk about their symptoms, so initially explain that you are going to ask them questions about their bowel habit and other symptoms. Assess symptom profile and identify the individual's most 'troublesome' symptom(s).

5. Symptom assessment can be extremely subjective. A symptom severity score and stool chart can be useful, particularly, to assess symptom change at follow up. Examples include:
   - A 10cm visual analogue scale (VAS scale) or a Likert scale to assess symptoms (abdominal pain, bloating, flatulence)
   - Bristol stool scale (Lewis & Heaton, 1997) to assess stool consistency

   Recording bowel frequency, urgency and incomplete evacuation after defaecation may also be helpful.

6. Identify predominant IBS symptom profile:
   - Diarrhoea predominant (IBS-D)
   - Constipation predominant (IBS-C) and
   - IBS mixed bowel pattern (IBS-M)

7. Take a detailed medical history with specific reference to allergies and intolerances (especially food). For people who already exclude certain foods from their diet, explore how they think these foods affect their IBS symptoms.
8. Take a family history with specific reference to gastrointestinal problems (e.g. coeliac disease, inflammatory bowel disease or IBS).
9. Record current medication for IBS, particularly antispasmodics, laxatives, anti-motility agents, tricyclics and SSRIs.
10. Assess and monitor anthropometry (weight, BMI and weight history). A low or high BMI is sometimes associated with IBS and dietary manipulation may help to improve BMI.

<u>Eating pattern and lifestyle</u>

1. Many people with IBS associate symptoms with an immediate or delayed response to eating. Assess eating pattern and usual dietary intake. Encourage a healthy eating pattern with a good variety of foods to ensure that the diet is nutritionally adequate. Use general healthy eating guidelines for the UK population with special attention to:
   - A regular meal pattern (breakfast, lunch and evening meal with snacks as appropriate)
   - Good eating lifestyle (taking time over meals, sitting down to eat, chewing food thoroughly, not eating late at night)
   - Drinking plenty of caffeine free, alcohol free, non fizzy fluids spread throughout the day, aim for 1.5-3.0 litres per day (35ml/kg)

2. Advise individuals with IBS that diet is only one contributing factor. Lifestyle issues (stress, psychological and psychiatric factors) and gut hypersensitivity may also be involved in symptom induction. Self management of diet and lifestyle is important in long-term symptom control. However, dietary manipulation does not work for everyone and it may only provide partial symptom improvement.

For dietary assessment consider the intake of:

- Milk and/or lactose
- Dietary fibre
- Fatty foods
- Fluid
- Caffeine
- Alcohol

Lifestyle considerations include:

- Exercise and relaxation
- Stress, anxiety and the demands of everyday life including psychosocial and psychiatric factors
- Frequency and timing of symptoms, e.g. meal related, daily, nocturnal, weekdays, weekends, holidays, exercise induced, menstrual cycle

Dietary considerations

Recommendations

In individuals where milk is suspected as a problem and a lactose hydrogen breath test is not available or appropriate, a trial period of a low lactose diet is recommended. This is particularly helpful in individuals with an ethnic background with a high prevalence of primary lactase deficiency.	**D**
Use a low lactose diet to treat individuals with a positive lactose hydrogen breath test.	**D**
In individuals where milk is suspected as a problem food and symptoms do not improve on a low lactose diet, assess other components of milk (e.g. cow's milk protein) as a contributing factor. Recommend a milk free diet or, in some cases, an alternative mammalian milk.	**D**
Avoid using dietary supplementation of wheat bran to treat IBS. Individuals should not be advised to increase their intake of wheat bran above their usual dietary intake.	**C**

Good Practice Points

Milk and/or lactose

Use a dietary assessment to consider the intake of milk and/or lactose.

Milk and dairy products are good sources of protein, calcium and other nutrients. Some people with IBS avoid milk or dairy products to alleviate symptoms and it is difficult to identify which component is responsible. Gradual lactose reintroduction may be helpful to determine an individual's lactose tolerance (threshold) level so discuss whether this is something the individual wants to consider. Most individuals with lactose malabsorption can tolerate 13g lactose without developing symptoms (Suarez et al., 1995). However, another component of milk may be responsible for symptoms, e.g. cow's milk proteins. If cow's milk proteins are not tolerated, initially recommend a non-mammalian alternative milk e.g. soya, rice, oat, quinoa, nut or coconut (preferably calcium fortified), rather than another mammalian milk e.g. goat's or sheep as mammalian milk proteins are similar.

IBS and lactose intolerance have similar symptom profiles. A lactose hydrogen breath test can be useful to distinguish between the two and may help with dietary management but is not always available.

The results of a hydrogen breath test to identify lactose intolerance may not be helpful. Lactose restriction to achieve symptom improvement and re-challenge is recommended to identify an individual's tolerance level. If symptoms continue with reintroduction then re-test at a later date. The inclusion of some milk or dairy products increases dietary variety and may help to improve nutritional adequacy.

Dietary fibre

Use a dietary assessment to consider the intake of dietary fibre from all food sources (cereals, grains, fruits, vegetables, nuts and seeds).

Avoid the addition of wheat bran to the diet of individuals with IBS as it may aggravate symptoms. Dietary and symptom assessment will help to determine whether current dietary fibre intake is optimal for that individual. For people with IBS-C, it may be helpful to encourage a drink to be taken at the same time as food sources of dietary fibre are consumed.

Second line

Recommendations

For individuals with IBS-C, dietary supplementation of ground linseeds can be recommended for a 3 month trial. Improvements in constipation, abdominal pain and bloating from linseed supplementation may be gradual.	**D**
For individuals with IBS and suspected or diagnosed fructose malabsorption, assess dietary intake of all short-chain fermentable carbohydrates (fructose, fructans, galacto-oligosaccharides and polyols). There is likely to be a benefit in reducing intake.	**B**
For individuals with IBS and abdominal bloating, abdominal pain and/or flatulence, assess dietary intake of fermentable carbohydrates as there may be a benefit in reducing intake.	**D**
There may be individual tolerance levels to fermentable carbohydrates. Food challenge will identify which foods can be reintroduced to the diet and what individual tolerance levels are.	**D**
Probiotics can be considered, ideally, after assessing the effectiveness of restricting intake of fermentable carbohydrates. Advise individuals choosing to try probiotics to select one product at a time and monitor the effects. They should try it for a minimum of 4 weeks at the dose recommended by the manufacturer.	**B**
There is considered to be no associated harm in taking probiotics for individuals with IBS.	**B**

Good Practice Points

If dietary assessment indicates that further dietary changes are necessary, consider the following:

Linseeds

For individuals with IBS-C and the therapeutic use of linseeds:

- Start with one teaspoon – one tablespoon per day of ground/milled linseeds and build to a maximum of 4 tablespoons per day (4 level tablespoons of linseeds = 24g)
- Some people find whole linseeds as effective as ground and it does not matter if they are golden or brown
- It is best to take linseeds with a drink (150ml fluid/tablespoon; (Blumenthal, 1998) and they can be added to other food (e.g. yoghurt, breakfast cereal, soup, salad)
- It is best to inform individuals that the full benefit of linseeds may take up to 6 months
- Individuals who have co-existing diverticular disease often avoid poorly digested foods such as seeds as they think they may irritate diverticulitis. In such circumstances it is best to advise the use of ground linseeds instead of whole linseeds

Fermentable carbohydrates

An emerging dietary treatment for IBS is the avoidance of fermentable carbohydrates, particularly fermentable oligo-saccharides, di-saccharides, mono-saccharides and polyols (FODMAPs). To be clinically effective a diet low in fermentable carbohydrates, requires specialist dietetic knowledge including expertise in the dietary sources of fermentable carbohydrates and their effects in the gut. Advanced training for dietitians is helpful to achieve a thorough understanding of fermentable carbohydrates.

To assess whether an individual has fructose intolerance, assess the diet for fructose containing foods (e.g. mango, honey) and identify whether symptoms occur in response to eating high fructose foods:

- Fructose (in excess of glucose or from a high fructose load) in fruit and fruit juice, honey, processed foods and drinks (in diagnosed or suspected fructose intolerance)

Where available, a fructose hydrogen breath test can be useful to identify fructose malabsorption prior to dietary intervention.

Assess dietary intake of fermentable carbohydrates using appropriate methods (e.g. diet history, food diary).

Assess the diet for:

- Fructans and galacto-oligosaccharides in fruit, vegetables, legumes, cereals and processed foods
- Polyols in fruit, vegetables and some sugar-free manufactured foods and medicines (e.g. sorbitol, xylitol)
- Lactose in milk and milk products (in diagnosed or suspected lactose intolerance)
- Resistant starch in fruit, vegetables, cereals and processed foods

Avoid relevant fermentable carbohydrates for 6 to 8 weeks.

Where wheat avoidance is indicated:

- Provide information on suitable wheat free alternatives with written resources (traces of wheat do not have to be avoided)
- A diet low in fermentable carbohydrates naturally limits gluten intake due to the restriction of wheat and rye, and many manufactured gluten free staple foods are suitable

Total fruit and vegetable intake should not be reduced when avoiding fermentable carbohydrates:

- Five portions of fruit and vegetables per day are recommended as in line with general healthy eating guidelines for the UK population
- In IBS-C it may help to increase to more than five portions per day

Where lactose or dairy intolerance is indicated:

- Assess calcium intake and provide details of alternative calcium rich foods
- If the calcium requirement is not met with alternative food sources, a calcium supplement should be considered

Provide comprehensive literature including suitable alternatives to foods avoided to ensure the diet is nutritionally adequate.

Reintroduction of fermentable carbohydrates verifies individual sensitivity, helps to identify individual tolerance levels and increases dietary variety.

Dietitians should provide:

- Verbal and written information on how to reintroduce foods, in what quantity and over what time period
- Details of foods high in fermentable carbohydrates to reintroduce that are relevant to that individual
- Contact information
- Review by telephone or in clinic to confirm the individual's level of tolerance to fermentable carbohydrates

Experience of educating individuals on the dietary restriction of fermentable carbohydrates indicates that longer appointments (45-60 minutes), visual aids and detailed explanation improve dietary compliance and symptom resolution. Providing dietary advice using group education sessions may help to overcome some of the issues surrounding longer appointment times.

Where dietetic services are unable to facilitate dietary education on reducing fermentable carbohydrates, current practice using NICE guidelines (NICE, 2008) is the next most suitable option.

Probiotics

Intervention using a probiotic to further improve IBS symptoms can be considered secondary to other second line advanced dietary interventions.

Individuals can be advised that there is insufficient good evidence to recommend a specific probiotic product.

There are many probiotics available in the UK with different preparations, doses and bacterial strains. Individuals with IBS who choose to try probiotics should be aware that some products contain ingredients that may increase IBS symptoms (fructans, polyols and fructose).

If an individual finds a probiotic beneficial after 4 weeks use they can continue to take it but the long-term effects are not known. Once a probiotic is stopped the bacterial strain(s) will gradually cease to colonise the gut.

Inform individuals with IBS that if one probiotic does not improve symptoms they may want to trial a different product.

The long-term effects of probiotics in IBS are unknown.

If second line advanced dietary interventions fail to improve symptoms, consider third line options (an elimination or empirical diet) or if this is not appropriate refer back to the referring clinician as diet may not be the most effective management.

Third line

Recommendations

Where food is considered to be a trigger for IBS symptoms, particularly IBS-D, an elimination or empirical diet can be considered.	**D**
The initial phase of an elimination or empirical diet should be followed for 2-4 weeks.	**D**
If there is no symptom improvement within 2-4 weeks of the initial phase of an elimination or empirical diet and foods consumed within the diet were not suspected symptom triggers, specific foods are an unlikely cause of IBS symptoms.	**D**

Good Practice Points

Elimination and empirical diets

As with second line treatment (a diet low in fermentable carbohydrates) elimination and empirical diets are time consuming. These diets may not be appropriate so consider referral back to the referring clinician for further treatment options.

Medical advice should be sought if there is concern over the medical management of existing or suspected food allergy.

Inform individuals with IBS that it usually takes 3–4 months to complete an elimination or empirical diet including the food reintroduction phase.

If there is no symptom improvement within 2-4 weeks of the initial phase, carefully review the diet using a detailed food diary. It may be necessary to remove other potential triggers in the diet before a decision is made that food intolerance is not causative. Trigger foods may be consumed regularly and often in large quantities.

If no trigger foods are identified, refer individuals back to the referring clinician for further management. To achieve nutritional adequacy of the diet, reintroduce excluded foods as quickly as possible.

After the initial exclusion period, caution should be taken before food reintroduction as a reaction may be more severe due to food avoidance.

During the food reintroduction phase, leave at least 48 hours in between food challenges. If an IBS symptom develops during that time remove the trigger food and do not challenge with a new food until the symptoms have resolved.

Offer a final review appointment 6 months after completion of the food reintroduction phase to assess nutritional adequacy of the diet.

Research recommendations

Adequately powered and well designed randomised controlled trials, with long-term follow up, should focus on the clinical effectiveness and/or safety of dietary treatments taking into consideration IBS-subtype and using objective symptom assessment if possible. Dietary treatments include:

- Linseeds
- Fermentable carbohydrates
- Probiotics, prebiotics and synbiotics
- Elimination or empirical diets

Identify the prevalence of lactose and fructose malabsorption in the UK taking into consideration people with or without IBS, ethnicity, studies carried out in primary and secondary care.

Assess the cost effectiveness of hydrogen breath tests in the management of lactose and/or fructose malabsorption.

Develop comprehensive nutritional data on the fermentable carbohydrate content of UK foods.

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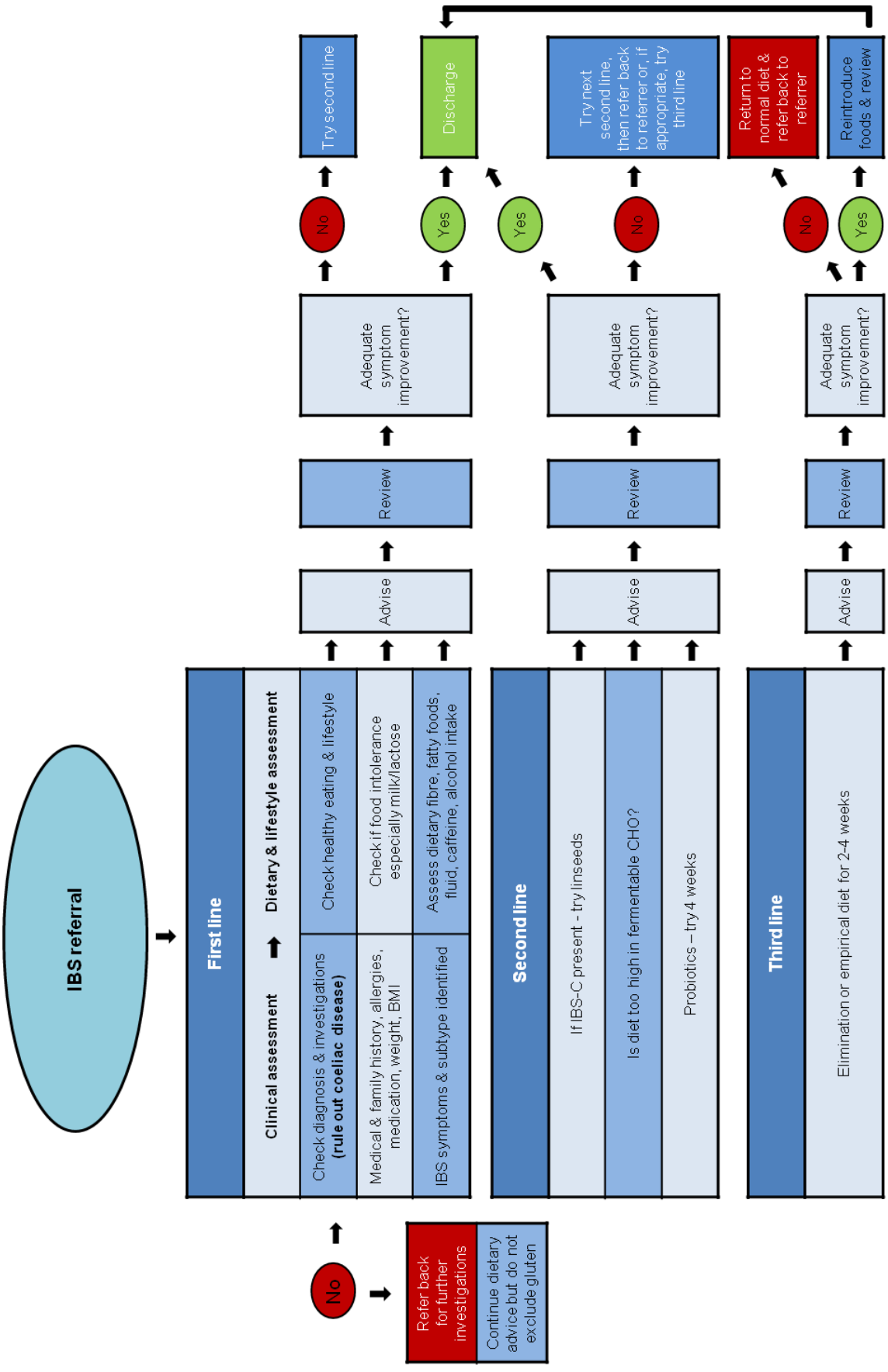
Algorithm


IBS referral
First line
Clinical assessment
Dietary & lifestyle assessment
Check diagnosis & investigations (rule out coeliac disease)
Medical & family history, allergies, medication, weight, BMI
IBS symptoms & subtype identified
Check healthy eating & lifestyle
Check if food intolerance especially milk/lactose
Assess dietary fibre, fatty foods, fluid, caffeine, alcohol intake
Advise
Review
Adequate symptom improvement?
No
Yes
Try second line
Discharge
Second line
If IBS-C present - try linseeds
Is diet too high in fermentable CHO?
Probiotics – try 4 weeks
Advise
Review
Adequate symptom improvement?
No
Yes
Try next second line, then refer back to referrer or, if appropriate, try third line
Return to normal diet & refer back to referrer
Third line
Elimination or empirical diet for 2-4 weeks
Advise
Review
Adequate symptom improvement?
No
Yes
Reintroduce foods & review
No
Refer back for further investigations
Continue dietary advice but do not exclude gluten