Pathway for identification and treatment of cow's milk allergy/lactose intolerance in infants

BREASTFED INFANTS

- Breastfeeding is the normal physiological way of feeding human babies. Where breastfeeding infants present with symptoms they **must always be assessed by a skilled breastfeeding practitioner** as per the BCUHB referral pathway (See Appendix 1)
- If a cow's milk allergy is suspected, exclude ALL cow's milk containing foods from maternal diet for 2-4 weeks and continue breastfeeding. Mother should supplement her diet with calcium enriched dairy substitutes.
- Ensure mother is taking a vitamin and mineral supplement suitable for breastfeeding (Mother may need to take an additional over the counter calcium supplement to meet her requirements of 1250mg per day).
- If symptoms persist, cow's milk protein allergy is an unlikely cause of the symptoms. GP to investigate other possible causes.
- If symptoms resolve, mother to challenge maternal diet with cow's milk containing foods.
- If symptoms return on reintroduction of milk containing foods, mother to remain on cow's milk free diet and **refer to local Paediatric Dietetic team**.

FORMULA FED INFANTS

- In general, most minor feeding problems in formula fed infants can be addressed with reassurance.
- All formula fed infants presenting with symptoms must have a documented bottle feeding assessment with the family health visitor using the designated BCUHB tool (Appendix 2). Bottle feeding technique should be directly assessed to ensure carefully paced technique and that the baby is not exhibiting signs of feed stress – the flow from the teat should not be rapid. A change of teat or formula could be considered as part of the initial plan. Bottle feeding should be monitored over a period of time before any further referral is instigated.
- A minority will develop severe symptoms (for instance following gastroenteritis, vomiting affecting weight gain or quality of life for the infant or parent, apparent allergic reactions) that suggest a change of formula is indicated.
- Recommendations to change infant feeds should only come from health professionals with an understanding of infant feed-related disorders (as opposed to simple feeding problems). In most cases, this is likely to be a Health Visitor, GP, Dietitian or Paediatrician.
- The plethora of specialist formulas can make it difficult for health care professionals to identify the most appropriate product or group of products for their patients. Therefore the attached pathway has been developed to make these choices more clear and simple. It is not intended to be implied that all infants with these symptoms need a specialist formula, nor that all symptoms should lead to progression through all the types of formulas. However, where a change of formula is felt to be necessary, the pathway is intended to give an evidence-based rationale for doing so.
- For further information on diagnosis of cows' milk allergy and for useful resources, see the iMAP (milk allergy in primary care) guidelines[1] and BSACI guidelines[2].
- Please note that all formulas should be made up according to current Department of Health guidance ie: that water should be at least 70^0C ie: with boiling water that has cooled for no more than 30 minutes – this includes pre-thickened formulas[3].
- **Refer to local Paediatric Dietetic team if symptoms persist**.

Lactose intolerance

- In infancy this occurs most commonly secondary to gastroenteritis and typically resolves within 6 – 12 weeks.
- Lactose-free maternal diet is unnecessary as lactose is present in breastmilk.
- Encourage mother to continue with breastfeeding to promote gut healing.
- Some research suggests that severe colic can – in part at least - be caused by lactose intolerance and so where symptoms are severe in formula fed infants, a trial of lactose free formula may be justified. If this does not resolve symptoms, cows' milk protein allergy is also a possibility (see table 1), particularly if there is a history of atopy in the parents or siblings[4].
- Lactose free formula is not excessively more expensive than normal infant formulas (equivalent to 'Comfort' formula in cost) and therefore families should be expected to purchase it in most cases. Where it is prescribed it should be done so for strictly limited periods with rigorous reassessment of symptoms before further supplies are prescribed. Few infants should need the formula after the time of weaning and supermarket products are available to purchase for children over the age of one year.
- Lactase drops (Colief) are available, but a lactose free formula is a more effective and cost effective method for treating lactose intolerance in a formula fed infant. They may be of limited benefit for some breast fed infants who are exhibiting symptoms of lactose intolerance – parents can buy them if they wish to try them.

Cows' milk allergy in infancy

Two NICE guidelines are available that are relevant to the diagnosis of food allergy in infancy:

1. **Diagnosis and assessment of food allergy in children and young people in primary care and community settings** [4]

Possible symptoms of food allergy given in the guideline are shown in Table 1. Relevant recommendations from the guideline include:

'Consider the possibility of food allergy in children and young people whose symptoms do not respond adequately to treatment for: atopic eczema. gastro-oesophageal reflux disease chronic gastrointestinal symptoms, including chronic constipation.'
'If non-IgE-mediated food allergy is suspected, trial elimination of the suspected allergen (normally for between 2–6 weeks) and reintroduce after the trial. Seek advice from a dietitian with appropriate competencies, about nutritional adequacies, timings of elimination and reintroduction, and follow-up.'
'For babies and young children with suspected allergy to cows' milk protein,
offer: food avoidance advice to breastfeeding mothers, information on the most appropriate hypoallergenic formula or milk substitute to mothers of formula-fed babies.
Seek advice from a dietitian with appropriate competencies.

2. **Eczema/ atopic dermatitis**[5]

This guideline recognises that food allergy may be the cause of symptoms in some children with eczema – particularly in those with symptoms that do not respond to robust topical treatments. It states:

'When clinically assessing children with atopic eczema, healthcare professionals should seek to identify potential trigger factors including: food allergens.
Healthcare professionals should consider a diagnosis of food allergy in children with atopic eczema who have reacted previously to a food with immediate symptoms, or in infants and young children with moderate or severe atopic eczema that has not been controlled by optimum management, particularly if associated with gut dysmotility (colic, vomiting, altered bowel habit) or failure to thrive.'

Gastro-oesophageal Reflux (GOR)

GOR *may* (but not always) be a symptom associated with cows' milk allergy. Management according to the NICE guideline for GOR should be followed before considering cows' milk allergy[6]:

In formula-fed infants with frequent regurgitation associated with marked distress, use the following stepped-care approach:

- *review the feeding history,* ***then***
- *reduce the feed volumes only if excessive for the infant's weight,* ***then***
- *offer a trial of smaller, more frequent feeds (while maintaining an appropriate total daily amount of milk) unless the feeds are already small and frequent,* ***then***
- *Advise families to purchase and trial a thickened formula (for example, containing rice starch, cornstarch, locust bean gum or carob bean gum).*

In formula-fed infants, if the stepped-care approach is unsuccessful (see above), stop the thickened formula and offer alginate therapy for a trial period of 1–2 weeks. If the alginate therapy is successful continue with it, but try stopping it at intervals to see if the infant has recovered.

Soya

Soya formulas have not been included on the pathway. Since 2003, soya formulas have not been recommended for infants under six months and not as first choice of main drink in the second six months of life[7,8]. The main reasons for this are:

  - Potential risks for future fertility in males and females
  - Potential for secondary soya allergy in infants with cows' milk allergy
- However, small amounts of soya containing foods can be introduced as part of the weaning diet in the second six months of life.
- After a year, supermarket soya drinks may be used if cows' milk is still not tolerated (details below).

Goats' milk

- Given the high risk of cross reactivity between cows' and goats' milk proteins, goats' milk infant formula and follow-on formula is not suitable for infants with a cows' milk protein allergy [9].

Length of prescription of specialist infant formulas for cows' milk allergy

- Few children will need to be given a prescribable milk free formula after their first birthday and it is recommended that GPs should only do so on the advice of a dietitian.
- As already described, lactose intolerance is usually short-lived, however for those who still need a lactose free milk after the age of one year, suitable lactose free milk products (eg: Lactofree) are available from the supermarket.
- Lactose intolerance symptoms usually resolve within 2-3 days when lactose is removed from the diet, regular formula/cow's milk should be reintroduced slowly, 4-8 weeks later depending on the age of the child.
- Most infants with cows' milk allergy will be challenged with cows' milk around their first birthday; 50% of infants with cows' milk allergy can expect to have grown out of cows' milk allergy at a year, while over 90% are likely to have outgrown it by around the time of school entry[10].
- For the minority with IgE-mediated allergy, this will be managed under the supervision of the allergy team.
- If the challenge is successful, the child can go back to a normal cows' milk containing diet.

For those who fail the challenge, alternative supermarket products are available. One soya drink (Alpro soya Growing Up Milk 1 – 3+) is specifically designed for this age group; over 2 years of age all other soya drinks with added calcium can be used. If soya is not tolerated, the dietitian may suggest an alternative based on coconut or oats fortified with calcium, giving advice to ensure that calorie and protein requirements are met from other sources. Rice drinks are not suitable under 4½ years due to the presence of trace amounts of arsenic [11].

Referral to the paediatric dietitians

- Criteria for referral to the paediatric dietitians are included on the pathway.
- Once an infant (or child) has been referred to the paediatric dietetic service, they will be reviewed at regular intervals and the primary health care team will be kept fully informed.
- We will also inform you if a family stops accessing our service while still on a specialist formula– enabling you to take any necessary action ie: stopping the product, negotiating re-referral to our services etc as appropriate.

Contact details

- Even if a child does not meet the criteria for referral as outlined in this pathway, the dietitians are always happy to be contacted for help or advice by their fellow healthcare professionals:

    - **Wrexham Maelor Hospital: 03000 847268**
    - **Ysbyty Glan Clwyd: 03000 855934**
    - **Ysbyty Gwynedd: 03000 851709**

Appendix 1

BCUHB - UNICEF BFI **Breastfeeding/Lactation support/referral pathway**
Usual breastfeeding support & care Named Health Visitor should instigate any referral to Tier 2 / 3 necessary Lactation Breastfeeding Specialist request referral form.docx must be completed & submitted to bcu.infantfeeding@wales.nhs.uk
Additionally trained breastfeeding support in a defined location led by lactation trained staff e.g. Community Breastfeeding Support Group or 'Hub'
Appointment to see a Registered Health Professional with Lactation Specialist qualification

BCUHB intranet site: 'Breastfeeding Policy - All Information and Guidance'
Breastfeeding Policy - All Information and Guidance (sharepoint.com)

- Breastfeeding Assessment Clinical Tool 2020.docx (sharepoint.com)

Appendix 2

Bottle Feeding Assessment Tool

- Bottle feeding Assessment tool 5-16.doc (sharepoint.com)

Table 1: Signs and symptoms of possible food allergy[4]

Taken from page 6 of NICE guideline No.116: Food allergy in children and young people: Diagnosis and assessment of food allergy in children and young people in primary care and community settings.

IgE mediated	Non IgE mediated
Pruritus	Pruritus
Erythema	Erythema
Acute urticarial	Atopic eczema
Angioedema	Gastro-oesophageal disease
Nausea	Loose or frequent stools
Colicky abdominal pain	Blood and/or mucous in stools
Vomiting	Abdominal pain
Diarrhoea	Infantile colic
Upper respiratory tract symptoms (nasal itching, sneezing, rhinorrhoea or congestion [with or without conjunctivitis])	Food refusal/aversion
Lower respiratory symptoms (cough, chest tightness, wheezing, shortness of breath)	Constipation
Signs or symptoms of anaphylaxis or other systemic allergic reactions	Perianal redness
	Pallor and tiredness
	Faltering growth (in conjunction with at least one or more GI symptom above (with or without atopic eczema)

References

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3. NHS Choices: How to make up baby formula http://www.nhs.uk/conditions/pregnancy-and-baby/pages/making-up-infant-formula.aspx [accessed 2.10.17]
4. NICE (2011): CG 116 Food allergy in children and young people: Diagnosis and assessment of food allergy in children and young people in primary care and community settings. http://www.nice.org.uk/nicemedia/live/13348/57929/57929.pdf
5. NICE (2007): CG57 Atopic eczema in children: Management of atopic eczema in children from birth up to the age of 12 years. http://www.nice.org.uk/nicemedia/live/11901/38597/38597.pdf
6. NICE (2015): NG1 Gastro-oesophageal reflux disease in children and young people: diagnosis and management https://www.nice.org.uk/guidance/ng1/resources/gastrooesophageal-reflux-disease-in-children-and-young-people-diagnosis-and-management-pdf-51035086789
7. COT (2003): Phytoestrogens and health www.foodstandards.gov.uk/multimedia/pdfs/phytoreport0503
8. Paediatric Group of the British Dietetic Association Position Statement (2010): Use of infant formulas based on soy protein for infants. www.bda.uk.com/publications/PaediatricGroupGuidelineSoyInfantFormulas.pdf
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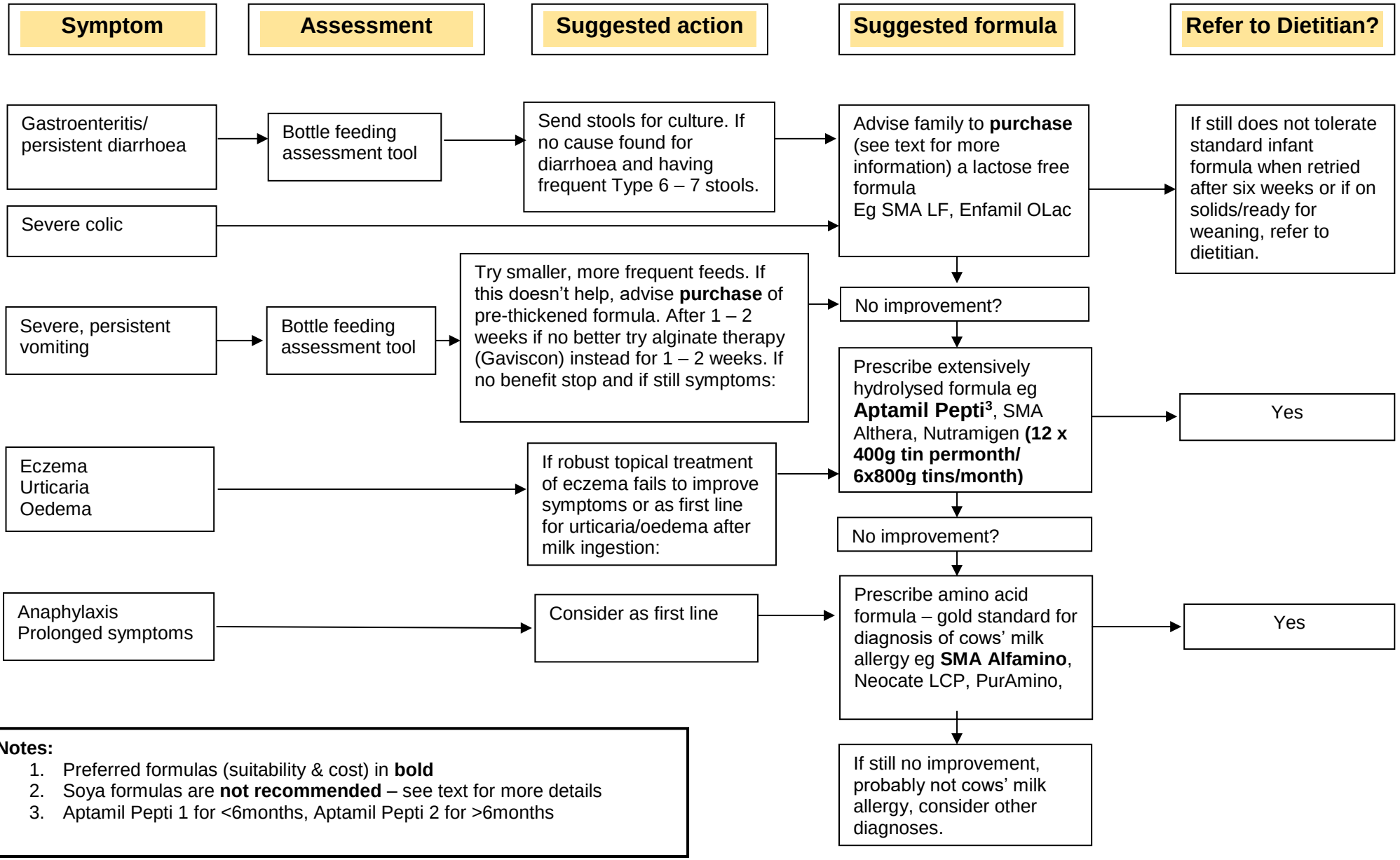
10. Koletzko S, Niggemann B, Arato A,et a (2012): Diagnostic Approach and Management of Cows'-Milk Protein Allergy in Infants and Children: ESPGHAN GI Committee Practical Guidelines. JPGN **55**: 221
11. http://www.food.gov.uk/science/research/surveillance/fsisbranch2009/survey0209

Pathway for use of specialist milk formulas for cows' milk allergy/lactose intolerance in formula fed infants

- **This pathway is only intended for use if symptoms are severe and ongoing in formula fed infants.**
- **Where breastfed infants present with feeding problems they should be referred for assessment by a skilled breastfeeding practitioner as the instigation of breastfeeding/lactation management strategies may be helpful.**



Notes:

1. Preferred formulas (suitability & cost) in **bold**
2. Soya formulas are **not recommended** – see text for more details
3. Aptamil Pepti 1 for <6months, Aptamil Pepti 2 for >6months

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