



LIFIB Your Local Infant Feeding Information Board

Briefing Paper 4

October 2015

LIFIB Briefing Paper: Cows' Milk Protein Allergy

The purpose of this Briefing Paper is to equip Midwives, Health Visitors and partners (including GPs and breastfeeding peer supporters), with information around cows milk protein allergy (CMPA) (also referred to as intolerance), in infants (under 12 months), to

A) clarify symptoms of cows milk protein allergy in artificially and breastfed infants;

B) outline **possible courses of action** and ways of supporting families whose babies may be suffering from cows milk protein allergy;

and

C) examine and evaluate the various forms of medical management of cows milk protein allergy, available to families and practitioners, and their efficacy.

This briefing paper has been commissioned to support healthcare professionals in Lancashire and was funded by Lancashire County Council via the North Lancashire Baby Friendly Project.



CMPA is the most common infant food allergy affecting an estimated 3%-7% infants worldwide; an immune system response to one or both milk proteins, casein & whey. Artificially fed babies develop CMPA after contact with the proteins in their cows' milk-based feed; exclusively breastfed babies develop CMPA as a result of milk proteins from products the mother has eaten transferring through breast milk. Levels of cow's milk protein present in breast milk are 100,000 times lower than those in cow's milk.

WHAT ARE THE SYMPTOMS OF COWS MILK PROTEIN ALLERGY?

There are two types of CMPA: IgE mediated, and non-IgE mediated.

IgE-mediated CMPA is the most common. Symptoms observable in infants include:

- a raised, itchy red rash: in some cases, skin is red and itchy, without a raised rash
- swelling of the face, mouth or other areas of the body
- nausea or vomiting
- abdominal pain or diarrhoea
- wheezing and coughing
- Hay fever-like symptoms, such as sneezing or itchy eyes



Non--IgE-mediated CMPA is less common. The symptoms of this type of allergy can take much longer to develop – sometimes up to several days. Symptoms can be much less obvious and are sometimes thought of as being caused by something other than an allergy. Some symptoms observable in an infant include:

- stools becoming much more frequent or loose (though not necessarily diarrhoea)
- constipation
- pain & sickness from GORD (gastro-oesophageal reflux): stomach acid escaping
- blood and mucus in the stools
- redness around the anus, rectum and genitals
- unusually pale skin
- failure to grow at the expected rate
- excessive and inconsolable crying, even though baby is fed and clean: 'colic'

Other causes of these symptoms may include suboptimal feeding technique, eczema, candida, viruses etc. Experienced feeding information should be offered to families.

HOW CAN CMPA BE DIAGNOSED?

First, ascertain what other possible causes there may be for the feeding problem: could it be the procedure followed to make up the infant's feed, or the method of delivery of the infant's feed, or the amount of the infant's feed, or the type of feed they have? Could there be some other, non-feeding related cause of the symptoms?

If you have explored all other possibilities and still believe that CMPA may be the problem, then this may need referral to a Paediatrician, via the GP.

Assess the presenting symptoms and other symptoms that may be CMPA associated.

Ask about the age of the infant when symptoms first started, speed of onset of symptoms following food contact, duration of symptoms, severity of reaction, frequency of occurrence, and reproducibility of symptoms on repeated exposure.

If CMPA suspected, before referring to secondary care take an allergy-focused clinical history. Ask about:

- Any history of atopic disease (asthma, eczema, or allergic rhinitis) or food allergy.
- Any family history of atopic disease or food allergy in parents or siblings.
- Details of any foods that are avoided in the family, and the reasons why.
- Weight gain of the infant since birth
- The child's feeding history, including whether they were breastfed or formula fed. If the child is currently being breastfed, ask about the mother's diet, and whether there has been any response to the elimination and reintroduction of foods
- Details of any previous treatment, including medication such as antihistamines, or specialist formula milks, for the presenting symptoms and the response to this.

The European Academy of Allergy and Clinical Immunology (EAACI) has published an extensive **Allergy-Focussed Diet History tool** for healthcare professionals.

From the NICE Clinical Knowledge Summary: If IgE-mediated CMPA is suspected following the clinical history above, refer to paediatric care for a skin prick and/or specific IgE antibody blood test (previously known as a RAST test—and please note this test will not confirm a non-IgE mediated CMPA) if there is:

- Faltering growth in combination with any gastrointestinal symptoms listed above
- One or more acute systemic reactions

CONTD...

- One or more severe delayed reactions
- Significant atopic eczema where multiple allergy is suspected by the parent / carer
- Confirmed IgE-mediated food allergy and concurrent asthma / other allergies
- Persisting parental suspicion of food allergy despite a lack of supporting history.

These tests may be performed in primary care if the expertise to conduct and interpret the test are available. The decision to perform a skin prick test or a specific IgE antibody blood test in primary care should also be based on the results of the allergy-focused clinical history and whether the test is available, suitable, safe, and acceptable to the child (or their parent or carer).

Ensure the parent or carer is provided with appropriate information on:

- IgE-mediated cows' milk protein allergy, including information on what it is and the potential risk of a severe allergic reaction.
- The diagnostic process (ie skin prick test and/or specific IgE antibody blood test).

CARE OF BABIES WITH CONFIRMED IgE MEDIATED CMPA

Formula fed infants should be given a cows' milk protein free diet until at least 9 months of age, using a suitable formula on prescription. They should be referred to secondary care for diagnosis, dietetic support and advice on duration of treatment and the need for and timing of re-challenge to test if the intolerance has resolved. With a specialist confirmed diagnosis, children are usually challenged at 9 – 12 months of age with varying degrees of success. Most children grow out of their intolerance by 18-24 months of age. Infants and children should also be referred to a paediatric consultant if growth/weight gain is not satisfactory on the special diet, if symptoms are severe or there are other medical conditions present. If symptoms were severe e.g. angio-oedema or shortness of breath, cows' milk protein challenges should be done under specialist supervision.

As previously mentioned, breast fed infants can display symptoms, though usually less severe, as some cows' milk proteins from the mothers diet may be found in breast milk. Breastfeeding should be encouraged with mother following a dairy free diet. Mothers should be advised to use a calcium and vitamin D supplement if they remain on a dairy free diet long term. Babies should be weaned onto a cows' milk free diet but referral to secondary care is still indicated to exclude other conditions and for appropriate dietary advice. Ensure that appropriate breastfeeding support is in place.

As many infants outgrow this allergy, re-trial of dairy is recommended after introduction of solids has begun, and the 'milk ladder' could be followed for example.

If the (RAST) specific IgE antibody blood test is negative for CMP, consider testing for allergy to other proteins including soy and egg etc. Please note there are no validated tests to confirm non-IgE mediated CMPA.

CARE OF BABIES WITH NON-IgE MEDIATED CMPA

Much of the information for non-IgE mediated cows' milk protein allergy applies, however cows' milk protein reintroduction should be managed by secondary care possibly with allergy testing and admission to hospital day care for oral challenge. If removal of dairy does not reduce symptoms, consider other allergens as well/instead.

Multiple allergies

It is worthwhile to note that babies suffering from CMPA often also have allergies to other foods, for example other animal milks, soy, egg, gluten and so on: once an allergy has been triggered, gut insult results in sensitivities to other allergens being triggered.

Specialist formula suitable for CMPA infants: used from birth to maximum 18 months.

Extensively hydrolysed examples include:

Nutramigen Lipil (Mead Johnson); Pepti (Danone Nutricia) (contains some lactose, not suitable for infants with secondary LI); Althera (VitaFlo); Alimentum (Abbott)

Amino Acid preparations include:

Neocate LCP (Danone Nutricia). Nutramigen AA (Mead Johnson) Alfamino (Nestle)

These are the most commonly used products but this list is not exhaustive. Infants with enterocolitis/proctitis with faltering growth, severe atopic dermatitis and symptoms during exclusive breast feeding are more likely to require amino acid based formula.

Soy formula—not recommended

A statement from the Chief Medical Officer advises against the use of soy-based formula in infants even if they have CMPA. This is due to its phytoestrogen content which could give hormonal side effects e.g. fertility problems in adulthood, and the increased risk of sensitisation to soy protein which occurs in 3:5 infants with CMPA. This is especially important in infants under 6 months because milk is their only source of nutrition. Soy formula should not be used under 6 months of age unless advised by a specialist team.

CONCLUSION

CMPA can occur in breast or artificially fed infants. IgE mediated CMPA can be tested for, but there is no test for non IgE-mediated CMPA. Symptoms are simple enough to spot when working through a list, and the allergy can be managed with dietary change.

LIFIB promotes breastfeeding as the best form of nutrition for infants and this should be promoted, supported and protected wherever possible.

This briefing covers all infants; including those who breastfeed, who are artificially fed or those who do a combination of both. For breastfed babies who present with feeding problems, breastfeeding should be protected as this is usually the best management. Specialist milks should only be considered when there is truly a clinical need after a thorough assessment. Assessment should include common feeding management issues and consideration of whether the appropriate infant feed products are being correctly prepared, stored, and fed to baby.

APPENDIX

<http://cks.nice.org.uk/cows-milk-protein-allergy-in-children#!scenario>
<http://cks.nice.org.uk/cows-milk-protein-allergy-in-children#!scenario:1>

http://www.firststepsnutrition.org/pdfs/Infant_milks_May_2014_final2.pdf
http://www.firststepsnutrition.org/pdfs/DRAFT_Specialised_milks_July2015.pdf

<http://www.lancsmmg.nhs.uk/wp-content/uploads/sites/3/2013/04/Prescribing-Guidelines-for-Specialist-Infant-Formula-Feeds-V3-Oct-2014.pdf>

REFERENCES

First Steps Nutrition (May 2014). Infant Milks In The UK; Specialist Milks in the UK (July 2015)

Lancashire Medicines Management Group "Prescribing Guidelines for Specialist Infant Formula Feeds" October 2014.

Email: LIFIB@outlook.com

Twitter: [@The_LIFIB](https://twitter.com/The_LIFIB)

If there's anything you would like from LIFIB, please get in touch!

Currently we have 315+ followers on our Twitter account, [@The_LIFIB](https://twitter.com/The_LIFIB):
the first place to hear about new things is via our feed.

We don't spam: if you are on Twitter, why not join us?