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A practical approach for UK primary care on the management of cow's milk allergy in infants

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The term 'Cow's Milk Allergy' (CMA) is used in this guidance, although the term 'Cow's Milk Protein Allergy' (CMPA) is also widely used in the literature.

INTRODUCTION

CMA is the commonest food allergy among children in the UK. Data from 2008 indicated 2.3% of 1–3 year-olds in the UK suffer from CMA.[1] In 2011, National Institute for Health and Care Excellence (NICE) published Clinical Guideline (CG)116 on the Diagnosis and Assessment of Food Allergy in Children and Young People in Primary Care and Community Settings.[2] It has become increasingly evident that for effective implementation, there needs to be further practical advice, which was outside of the scope of the current NICE guideline, on establishing the initial diagnosis and the further management of infants with CMA.

A health economic analysis published in 2010 concluded that CMA imposes a, 'substantial burden on the NHS'.[3] The 'cost' of this burden can be kept at a minimum by improving the care provided in the community.

As clinicians involved in the development of the NICE guideline, we have therefore aimed to provide a practical tool for the management of CMA in primary care.

The algorithm we have produced is intended as an adjunct to the published NICE guideline[2] and is intended for local adaptation. Algorithms have been published previously[4] but not aimed at UK primary care. The algorithms and further supporting information have been published and are freely available online.[5]

MANAGEMENT ALGORITHM

Whenever cow's milk allergy is considered, an 'allergy-focused clinical history' should be taken. This includes any family history of atopy.[2] A positive family history makes the diagnosis of food allergy more likely but its absence does not exclude the diagnosis.

NICE CG116 lists signs and symptoms of food allergy, dividing them into symptoms affecting the skin, gastrointestinal tract, and respiratory system. It states diagnosis should be particularly considered in infants:

- with symptoms in different organ systems; or
- who fail to respond to usual treatments (for example, for eczema or gastrointestinal symptoms, such as reflux).[2]

Symptoms are divided into those suggestive of IgE antibody-mediated reactions (usually occurring within minutes of ingestion), and those developing delayed symptoms (usually developing 2–72 hours after ingestion), which may be non-IgE-mediated.[2]

From the history, it is important to:

1. determine the severity of the symptoms;
2. decide on the likely mechanism of the reaction.

These two factors determine:

- which tests should be performed;
- which hypoallergenic formula should be prescribed (see Box 1 for a list of hypoallergenic formulas); and
- if onwards referral to secondary care will be required.

The algorithm is based around these considerations.

The first algorithm considers the severity of symptoms on presentation.

The second algorithm outlines the management of those infants with likely mild to moderate non IgE-mediated food allergy. These infants can be managed in primary care. It divides the management into:

- those exclusively breastfed; and
- those consuming any formula feed.

Box 1. Hypoallergenic formulas

The constituents vary between the different individual extensively hydrolysed formulas available and also between the different individual amino acid formulas available. This can sometimes influence both an infant's clinical tolerance and even their perceived apparent palatability of that formula.

The hypoallergenic formulas currently most commonly used in the infant age group in the UK for term infants are:

Extensively hydrolysed formulas

Casein-based constituents			
Nutramigen LIPIL 1	Birth onwards	Mead Johnson	400g tin
Nutramigen LIPIL 2	>6 months of age	Mead Johnson	400g tin
Similac Alimentum	Birth onwards	Abbott Nutrition	400g tin
Whey-based constituents			
Althéra	Birth onwards	Vitaflo	450g tin
Milupa Aptamil Pepti 1	Birth onwards	Milupa	400g or 900g tin
Milupa Aptamil Pepti 2	>6 months of age	Milupa	400g or 900g tin

Amino acid-based formulas

Neocate LCP	Birth onwards	Nutricia SHS	400g tin
Nutramigen AA LIPIL	Birth onwards	Mead Johnson	400g tin

It considers making the diagnosis and then how and when to look for development of tolerance.

Evidence-based recommendations on how long an infant/child should follow a cow's milk-free diet (including the use of hypoallergenic formula) before considering if the child has outgrown their milk allergy are lacking. However, it is usual clinical practice that infants with mild to moderate non-IgE-mediated CMA remain on a cow's milk protein-free diet until 9–12 months of age and for at least 6 months following the initial implementation of the exclusion diet. It is then appropriate to determine if they have become tolerant/outgrown their reactions to cow's milk protein.

The algorithm indicates which infants should be considered for reintroduction of milk protein at home to determine if the child has developed tolerance. There is no standard approach to adding milk protein back into the diet but following best available evidence, it is recommended to start with small amounts of well-cooked milk, for example, malted-milk biscuits, then stepping up a 'Milk Ladder' using, for example, cakes, then baked-milk dishes, to eventually having large amounts of plain milk. This should only be done when the child is well and ideally under the guidance of a dietitian. If a child reacts at any step of the Ladder, it is recommended to fall back to the step on the Ladder where foods were tolerated and continue to eat these.

The child should then be challenged with larger amounts, or with less heated/cooked milk again in 4–6 months, that is, attempt to step further up the Ladder.

In children who remain allergic to cow's milk, a hypoallergenic formula should ideally be prescribed until the age of 2 years for nutritional reasons even if they are tolerating some dairy products. However, in children managing to consume a range of milk containing foods, a dietitian will be able to advise if, following a nutritional assessment, commercially available cow's milk-free alternatives could be used.

CONCLUSION

The recognition and management of CMA is a challenge for primary care. The many symptoms with which an infant can present, either alone or in combination are commonly seen in the general practice setting and many will not be due to CMA.

The variation in the feeding methods of these infants and the variable natural history of the disease adds to the challenges. Earlier recognition and effective management should reduce costs, both financially and in terms of quality of life. Referring to secondary care only when primary care management is not considered appropriate, prescribing the most appropriate formulas, and avoiding unnecessary medications, investigations, and referrals for previously 'unexplained' symptoms should help reduce as much as possible the burden of CMA on UK primary care.

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