



COW'S MILK PROTEIN ALLERGY IN CHILDREN

What is Cow's Milk Protein Allergy (CMPA)?

- CMPA is an **adverse immune response** to proteins in milk.
- Affects all ages but usually presents in infancy. Affects 2-7% of formula fed infants.
- Exclusively breast fed babies can develop CMPA as a result of protein in the mother's diet entering breast milk.
- **Allergy may be confused with intolerance.** Intolerances (rare) are non-immunological reactions to cow's milk e.g. primary lactose intolerance. Unless a child has just had a GI infection, infants with GI symptoms on exposure to cow's milk are more likely to have CMPA than lactose intolerance.

There are two types of CMPA (IgE mediated and non-IgE mediated)

IgE mediated allergy: Immediate (Type 1) hypersensitivity reaction

Acute reaction which usually occurs within 20 minutes of exposure e.g. urticaria or angioedema

Non-IgE mediated allergy: Delayed (Type 4) hypersensitivity reaction

The reactions are usually delayed e.g. eczema, GORD and diarrhoea. Non IgE mediated allergy can occasionally cause a severe form of allergic reaction with acute GI symptoms.

Signs & Symptoms of Possible CMPA

IgE Mediated

- **The Skin**-pruritus, erythema, acute urticaria, acute angioedema
- **The GI System**-angioedema (lips, tongue, palate), oral pruritus, nausea, colicky abdominal pain, vomiting, diarrhoea.
- **The Respiratory System**-nasal itching or congestion, sneezing, rhinorrhoea, conjunctivitis, cough, chest tightness, wheezing, shortness of breath.

Non IgE Mediated

- **The Skin**-pruritus, erythema, atopic eczema
- **The GI System**-gastro-oesophageal reflux disease, loose or frequent stools, blood or mucus in stools, abdominal pain, infantile colic, food refusal or aversion, constipation, perianal redness, pallor, tiredness, faltering growth,
- **The Respiratory System**-cough, chest tightness, wheezing, shortness of breath.

CMPA should be considered when a child has one or more of these signs & symptoms. It should be considered in those whose symptoms do not respond adequately to treatment for atopic eczema, GORD or chronic gastrointestinal symptoms, especially if there are symptoms in more than one system.

Taking a History

1) Does the child have a history of atopic disease (asthma, eczema, allergic rhinitis)?

Children with atopic eczema are at higher risk of developing food allergies and the earlier the onset and more severe the eczema, the higher the risk.

Severe allergic reactions are more frequent in asthmatics (especially if poorly controlled)

2) Is there a family history of atopic disease or food allergy?

3) Details of the symptoms e.g. age of onset, speed of onset, duration and severity.

4) Feeding history e.g. breast or bottle fed, age of weaning

Physical Examination

Remember to look for **Growth**- look at the red book and measure weight and height / Evidence of **atopic eczema, asthma, allergic rhinitis.**



Investigations, Referral & Management

If IgE mediated CMPA is suspected

- 1) Start extensively hydrolysed formula (If <6 months e.g. Nutramigen1 or Similac Alimentum; if >6 months e.g. Aptamil Pepti 2 or Althera)
- 2) **Make an urgent referral to paediatrician and dietician** for testing i.e. blood test for specific IgE antibodies to cow's milk and skin prick test to cow's milk.

If Non-IgE mediated CMPA is suspected

The only reliable test is a **trial elimination of cow's milk protein** (for between 2-6 weeks), followed by a reintroduction. If the child has CMPA, the symptoms will improve on CMP exclusion and recur on reintroduction.

- 1) Start extensively hydrolysed formula (as above with IgE mediated CMPA)
- 2) **Refer to the paediatric dietician** who will make phone contact within 2 working days. They will advise on food avoidance/ nutrition for breast-feeding mothers and the most appropriate hypoallergenic formula for bottle-fed babies as well as management of the period of reintroduction. Pre-warn parents that they will probably be asked to challenge with normal formula after 4-6 weeks.

Other situations when referral to paediatric consultant would be appropriate:

- The child has had a severe, complex or systemic reaction
- Suspected non-IgE mediated CMPA with dermatological symptoms
- Growth is faltering
- There is clinical or parental suspicion of multiple food allergies
- There is diagnostic uncertainty
- The parents request referral

The Role of the Dietician

Referral is by letter to **Nutrition and Dietetics** at the West Suffolk Hospital. Telephone advice can be requested on **01284 712866**. The input of the dietician is crucial in the management of children with CMPA. For example, as well as guiding the family through the initial period of diagnosis they can:

- 1) Advise on the suitability of different milks.
- 2) Advise the family on how to avoid exposure to milk e.g. education around food labels.
- 3) Help decide when it is safe to reintroduce dairy into the diet.
- 4) Provide families with a treatment plan to manage allergic reactions due to accidental exposure.

Prognosis

Most children with milk allergy outgrow it. In **IgE mediated CMPA** the average age to grow out if it is 5 years old. It is more likely to persist in those with asthma/allergic rhinitis. In **non-IgE mediated CMPA** most have probably grown out of it by 3 years old. The dietician or paediatrician will advise on how and when to consider reintroduction.

References

- **Food allergy in children and young people. Diagnosis & assessment of food allergy in children & young people in primary care & community settings** (NICE clinical guideline 116 February 2011).
- **Managing cow's milk allergy in children** (Sian Ludman, Neil Shah, Adam T Fox. BMJ 21 September 2013 Volume 347 Pages 28-32).
- **Clinical Guideline Diagnosis & Management of Cow's Milk Protein Allergy & Lactose Intolerance by Ruth Whymark & Dr R Lakshman** (via the Pink Book on West Suffolk Hospital website).
- **Best Practice Recommendations for Prescribing Specialist Infant Formula in Primary Care in Suffolk 2012** Lindsey Mowles, Miranda Potter & Emma Stone (Paediatric Dieticians, Ipswich Hospital NHS Trust)