Cow’s Milk Protein Allergy (CMPA) is the most common food allergy in early childhood in the developed world next to egg allergy. The prevalence is estimated at three to seven per cent, with a resolution rate of 80 to 90 per cent at six years. Accurate diagnosis rests on a good clear allergy focused history. 1, 2, 3, 4

What is Cow’s Milk Protein Allergy (CMPA)?
CMPA is an adverse immunological response to cow’s milk protein. Reactions can be either:

(a) IgE (Immunoglobulin E) mediated, which elicits an immune response and symptoms are usually fairly immediate after exposure; or

(b) Non IgE mediated, which can cause a delayed response in the skin or gastrointestinal tract, which can sometimes be referred to as cow’s milk protein intolerance (CMPI). 4

The treatment for both is similar.

How does CMPA present?
CMPA can occur in both bottle and breast fed infants, but occurs less in breast fed infants. 5 Early diagnosis and adequate treatment can reduce the risk of impaired growth and nutritional deficiency.

IgE Mediated symptoms include:
- Rash, urticaria (nettle sting type rash)
- Pruritis
- Eczema flare
- Angioedema
- Vomiting
- Diarrhoea
- Abdominal cramps
- Wheezing, respiratory difficulty
- Hypotension, shock
- Altered levels of consciousness

In IgE mediated responses histamine and other chemicals mediators are released causing vasodilation leading to the vast array of symptoms listed above.

Non IgE mediated symptoms can include:
- Severe colic
- Gastro oesophageal reflux
- Vomiting
- Diarrhoea
Clinical review

Management of CMPA

Management of CMPA is avoidance of all dairy products including other mammals milk, eg, goats or sheep milk due to cross reactivity. The support of a dietician can ensure adequate nutritional recovery and avoidance of malnutrition. For infants who are at high risk of anaphylaxis, extensively hydrolysed formulas (EHF) are the first line substitute, and infants who are at low risk of anaphylaxis, extensively hydrolysed formulas (EHF) are tolerated – these are made of cow’s milk protein, but the proteins are extensively broken down so less well recognised by the immune system such as Nutramigen and Aptamil Pepti. If symptoms do not settle or the infant won’t tolerate EHF, AAF formula should be introduced. Amino acid based formulas do not contain peptides so are not recognised by the immune system. These should be used in infants who present with anaphylaxis, CMPA or with severe colitis or faltering growth. Formula brands include Neocate and Nutramigen Puramino. Weaning to solids must be dairy free and the parents may need support and guidance during this time.

What about soya milk?

Soya formula is usually not recommended in infants under six months and can be used with caution in children over six months as soya and cow’s milk can cross react. Soya yoghurts and soya butter can be useful substitutes if tolerated and soya milk can be used in some recipes to substitute cow’s milk. It is recommended that infants stay on EHF or AAF until at least one year of age to ensure adequate nutrition, soya milk can be used thereafter, unless the cow’s milk allergy has been resolved.

Breast fed infants

Breast feeding is best for infants and mothers should be encouraged by all health care professionals to breastfeed their babies. Small amounts of cow’s milk protein can pass through breast milk and exclusively breast fed infants may present with severe eczema, failure to thrive, severe reflux and colic. The mother, if she wishes to continue to breastfeed, will need to commence a dairy elimination diet with the support of a dietician. The baby may need supplementation with an amino acid based formula if there is significant failure to thrive. The mother will also require supplementation with calcium and vitamin D3. It is important to reassure the mother that the cow’s milk allergy would present on the introduction of dairy to the infant diet anyway and the child’s reaction to her consumption of dairy products is not her fault. It should be noted that mothers of breast fed infants who present with dairy allergy at the introduction of weaning to dairy do not need to restrict dairy from their own diet as baby has tolerated her milk to date.

Medications

Symptoms can be managed with non sedating antihistamines such as ceterizine, and for those infants with eczema, topical steroids can be used. Patients who present with anaphylaxis or are at high risk of anaphylaxis will need a pair of adrenaline auto injectors in case of severe reaction and will need to be shown how and when to use them.

Infants with CMPA should be under the care of a paediatrician with an interest in allergy or a paediatric immunologist, and should also have the support of community, or hospital based dietician.

Diagnosis is vital and the taking of a clear allergy focused clinical history should guide you to the diagnosis of CMPA/CMPI, including a physical examination.

Resolution

The resolution rate for cow’s milk protein allergy is estimated 60 to 70 per cent at two years and 80 to 90 per cent at three years. The timing of an oral food challenge in hospital depends on the individual case.

Recently the concept of oral immunotherapy, which is the controlled introduction of cow’s milk protein, therefore desensitising the individual, is promoting tolerance 10 times faster than those who don’t introduce cow’s milk protein. Careful selection of patients who can introduce small amounts of baked dairy on the milk ladder is essential to ensure patient safety. See www.ifan.ie.

Regular medical review is important to assess tolerance and to guide parents if resolution is occurring.
Further reading
www.ifan.ie
www.anaphylaxis.co.uk
www.anaphylaxisireland.com
www.jext.ie
www.epipen.com
www.asthmasciety.ie
www.irishskinfoundation.ie

References:

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