GUIDELINE FOR THE MANAGEMENT OF COW’S MILK ALLERGY

Reference: CMP Allergy  Version No: 2

Applicable to: All children in whom CMP intolerance or allergy is suspected

Classification of document: Guideline

Area for Circulation: Children’s Hospital for Wales

Authors: Liz Bragg (Associate Specialist)  Kath Singleton (Dietitian)  South Wales Paediatric Gastroenterology Network Group

Group Consulted: Practitioners within the Children’s Hospital for Wales  SWPGNG  Current literature

Ratified by: Child Health Guideline Meeting 2010 (version 1)

Date Published: Version 2: July 2012

<table>
<thead>
<tr>
<th>Version Number</th>
<th>Planned Date of Review</th>
<th>Reviewer Name</th>
<th>Completed Action</th>
<th>Approved By</th>
<th>Date Approved</th>
<th>New Review Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2013</td>
<td>Reviewed in 2012 due to SWPNG guideline</td>
<td></td>
<td></td>
<td>July 2012</td>
<td>2014</td>
</tr>
<tr>
<td>2</td>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Disclaimer

These have been ratified at the Child Health Guideline Meeting, however clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician.
If in doubt contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

Guideline for the management of Cow’s Milk Protein Allergy:
Cow’s Milk Protein Allergy

Cow’s Milk Protein Allergy (CMPA) is a relatively common problem in children. It may be IgE or non-IgE mediated. This distinction has not been made within this guideline, since management is unaffected. Lactose intolerance is a separate entity which is characterised by explosive diarrhoea associated with milk ingestion. Primary intolerance is rare in our population. Secondary intolerance is seen more often. This is not dealt with in this guideline.

Symptoms

CMPA may present in a number of different ways, with symptoms affecting more than one system. These are outlined on the flow chart that follows. Presentation with acute anaphylactic reactions (IgE mediated) should be treated as per current APLS guidelines for the treatment of anaphylaxis.

Management and Investigation

Management is outlined on the flowchart that follows

Key facts:

- Total IgE, specific IgE to Cow’s milk protein and/or skin prick testing may be helpful in the acute IgE mediated allergic reactions and should be considered before return to specialist clinic so results are available
- Dietary advice is key; give advice sheet to all families (even pre-weaned babies) and refer to dietetics.
- CMPA resolves in most children by school age (45-50% 1yr, 60-75% 2 yrs, 85-90% 3 yrs)
- Breast feeding mothers need prompt dietetic advice for them to follow a maternal CMP free diet with adequate calcium, (1000mg Ca & 10mcg Vitamin D = Calcichew D3 forte one tablet bd. GP to prescribe).
- Extensively hydrolysed infant formula is the first line for formula fed infants; Nutramigen 1 or Pepti Junior are suitable from birth to 12 months of age.
- Amino acid infant formulae (table 2, page 5) are only for those not responding to extensively hydrolysed milk or having life threatening / severe symptoms such as anaphylaxis/wheezing on exposure to milk, chronic diarrhoea leading to faltering growth and/or iron deficiency anaemia. These formulas are more expensive and the European guidelines do not recommend these formulas as first choice for mild-moderate symptoms.

Milks to Avoid

Soya Milk

Although in theory soya milks could be an alternative to standard humanised formula milk, the incidence of coincident soya allergy is around 10 - 30%. There are also concerns about the presence of endogenous phyto-oestrogens (plant hormones) which preclude the use of this type of milk in young male infants and as a result the Food Standards Agency and the British Dietetic Association do not advise on the use of soya milk for those under the age of six months in particular.
Rice Milk

Rice milk should be avoided in children under 5 years following FSA advice regarding the presence of trace amounts of inorganic arsenic. This cannot be excreted from the body once absorbed and is carcinogenic.

Other Milks

There is no role for alternative mammalian milks such as goat’s milk as there is a high incidence of cross-reactivity with cow’s milk protein. Milk substitutes based on grains, legumes or nuts (e.g. oat milk, almond milk etc.) are nutritionally incomplete and should be avoided in children under 2 years of age.

References:

NICE Draft National Care Pathway for Children with Food Allergy

Dietary products used in infants for treatment and prevention of food allergy. Joint statement of ESPACI Committee on Hypoallergenic formulas and the ESPGHAN Committee on nutrition. Arch Dis Child 1999;81:80-84

Guidelines for the diagnosis and management of cow’s milk protein allergy in infants


British Dietetic Association Position Statement: Soya Protein for Infants October 2010

CMO’s Update 37 Department of Health 2004

Rice Milk and arsenic, Food Standards Agency 2009

Documents to be read with this guideline (all on following pages)
- Flowchart (following page)
- Infant formula chart (p5-6)
- Referral form for dietetics (p7)
- Parent information on milk free diet (p8-9). Also available on parent information tab on the Child Health pages of the portal.

This guideline is based on the Children’s Hospital for Wales ‘Guideline for the management of CMP Allergy’ ratified in 2010, with additional information from the 2012 Guideline published by the South Wales Paediatric Gastroenterology Network Group. This guideline is more specific to Cardiff and Vale UHB, with milk availability charts, referrals for dietitian, and parent information.
Guideline for the management of Cow’s Milk Protein Allergy:

**Features**
One or more may be present.

**GI**
- Vomiting
- Frequent regurgitation
- Diarrhoea > 2/52
- Constipation
- Perianal rash
- Blood in stool
- Faltering growth
- Refusal to feed

**Dermatological**
- Atopic dermatitis
- Urticaria

**General**
- Persistent distress
- Colic
- Inconsolable crying

**Allergy**
- Anaphylaxis
- Angioedema
- Acute laryngo-oedema

*Italics = severe*
Infant Formulae Used in the UK (compiled by Kath Singleton, Dietitian)

The following table is a list of infant formulae available in the UK, the preferred specialist milks used at UHW are in **bold italic**. Other formulae will be made available for specific conditions on request to the Paediatric Dietitians.

**TABLE 1: Infant milks available over the counter**

<table>
<thead>
<tr>
<th>Formula</th>
<th>Examples</th>
<th>Indication for use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Formulae</strong></td>
<td><em>Aptamil First Milk, Cow &amp; Gate First Infant Milk,</em> Hipp Organic First Infant milk, SMA First Infant Milk</td>
<td>All suitable from birth to 1 year age. Preferred formulae if not breast feeding.</td>
</tr>
<tr>
<td><strong>Standard Formulae</strong></td>
<td>Aptamil Extra Hungry, Cow &amp; Gate for Hungrier babies, Hipp Organic Hungry, SMA Extra Hungry</td>
<td>Often marketed for hungrier babies as the protein form a firmer curd in the stomach – BUT NO evidence to support these claims.</td>
</tr>
<tr>
<td><strong>Follow On Formulae</strong></td>
<td>Aptamil Follow on, Cow &amp; Gate Follow on, Hipp Organic Follow on (from 10 months age), SMA Follow on.</td>
<td>Can be used from 6 months age. Has higher protein, iron, vitamins C, D &amp; B6 than standard formulae.</td>
</tr>
<tr>
<td><strong>Soya Based Formulae</strong></td>
<td><em>Infasoy,</em> SMA Wysoy</td>
<td>In the past used for cows milk protein/lactose allergy. Lately the Dept, of Health does <strong>not advise their use under 6 months age</strong> due to high phyto-oestrogen levels which may distort hormonal balance in young adults. High cross reactivity with cows milk formulae in suspected allergic reactions.</td>
</tr>
<tr>
<td><strong>Modified Formulae for minor digestive problems.</strong></td>
<td>Aptamil Easy Digest, Cow &amp; Gate Comfort</td>
<td>Evidence for use is based on limited small studies. Popular with parents with some positive results. Not to be used in proven cows milk allergy.</td>
</tr>
<tr>
<td><strong>Pre Thickened Formulae</strong></td>
<td><em>Enfamil AR,</em> SMA Stay Down</td>
<td>Constituents added to formula which thickens when in contact with stomach acids. GORD</td>
</tr>
</tbody>
</table>
## TABLE 2: Infant milks available on prescription

<table>
<thead>
<tr>
<th>Formula</th>
<th>Examples</th>
<th>Indication for use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre Term Formulae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A modified cows milk formula.</td>
<td>Aptamil Preterm, Nutriprem 1,</td>
<td>Specialist formulae for very low birth weight babies. Only available in neonatal units. Post discharge pre term formulae – has more calories, protein some vitamins &amp; minerals to encourage catch up growth.</td>
</tr>
<tr>
<td></td>
<td>SMA Gold Prem.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Nutriprem 2</strong></td>
<td></td>
</tr>
<tr>
<td><strong>High Energy Milks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Infatrini,</td>
<td>Increased calories &amp; protein, based on modified cows milk formula.</td>
</tr>
<tr>
<td></td>
<td>SMA High Energy,</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Similac High Energy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Modified Fat</strong></td>
<td>Caprilon</td>
<td>75% fat as MCT*. Used in liver disease, fat malabsorption, pancreatic insufficiency. Chylothorax, 90% fat as MCT*.</td>
</tr>
<tr>
<td></td>
<td>Monogen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MCT Step 1</td>
<td></td>
</tr>
<tr>
<td><strong>Extensively hydrolysed formulae (eHF)</strong></td>
<td><strong>Nutramigen 1 &amp;2 (from 6 months age). Protein is extensively hydrolysed casein.</strong></td>
<td>Cows milk allergy, whole protein or disaccharide intolerance.</td>
</tr>
<tr>
<td>Carbohydrate is glucose polymers unless stated</td>
<td>Pepdite – protein is hydrolysed pork collagen &amp; soya, 3% fat as MCT*</td>
<td>As above, multiple malabsorption, short bowel syndrome</td>
</tr>
<tr>
<td></td>
<td>MCT Peptite – protein as Pepdite &amp; 75% fat as MCT*</td>
<td>As above , pancreatic insufficiency.</td>
</tr>
<tr>
<td></td>
<td>Pepti – protein 100% hydrolysed whey, reduced lactose (38%)</td>
<td>Cows milk protein allergy, NOT lactose intolerance.</td>
</tr>
<tr>
<td><strong>Amino Acid Formulae (AAF)</strong></td>
<td>Neocate LCP,</td>
<td>Most hypo allergenic formulae. Whole protein /hydrolysate intolerance, multiple malabsorption, short bowel syndrome.</td>
</tr>
<tr>
<td>Protein is a mixture of amino acids only. Carbohydrate is hydrolysed corn starch</td>
<td>Nutramigen AA</td>
<td></td>
</tr>
</tbody>
</table>

*MCT = medium chain triglycerides.

There are more highly specialist formulae for renal disorders & inborn errors of metabolism. Addition of fat, carbohydrate & protein is possible but will require assessment by a paediatric Dietitian.

Table based on information from Paediatric Group of the British Dietetic Association 2008, with formulae names being updated as appropriate.
Children’s Hospital for Wales and South Wales Paediatric Gastroenterology Group

Guideline for the management of Cow’s Milk Protein Allergy:

---

<table>
<thead>
<tr>
<th>NAME OF CHILD TO BE REFERRED:</th>
<th>NHS Number ............................................. (MUST BE COMPLETED)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>D.O.B.:</td>
</tr>
<tr>
<td>Address:</td>
<td>Gender:</td>
</tr>
<tr>
<td>Post Code:</td>
<td>Tel No.:</td>
</tr>
<tr>
<td>Parent / carer’s name:</td>
<td>Tel No.:</td>
</tr>
</tbody>
</table>

Has this patient been referred before: Yes / No If yes, when?........................................

Is Home Visit required? Yes / No If Home Visit required please fill in details over page

Is an Interpreter required? Yes / No If yes, please specify language spoken & ethnic origin

Name of Referrer: (please print) ........................................ Date: ....................................

Signed: ........................................ Designation: ........................................

Address: ........................................ Tel No.: ........................................

Child’s G.P.: ........................................ Please advise G.P. of any referrals made

Address: (if different from above) ........................................

Consultant & Speciality (if appropriate): ........................................

Reason for Referral: (please give as much information as possible): ........................................

Diagnosis: ........................................

Relevant Medical History: ........................................

Relevant measurements (please send a copy of the growth chart for children with obesity or F.T.T.)

Most recent weight: ........................................ Date: ........................................ Centile: ........................................

Most recent height: ........................................ Date: ........................................ Centile: ........................................

Birthweight (if appropriate): ........................................ Gestation: ........................................

Haemoglobin: ........................................ Serum Ferritin: ........................................ Other: ........................................

Relevant Medication: ........................................

Social Circumstances: ........................................

For Dietetic use only: ........................................ Caseholder ........................................

Date received: ........................................ Which clinic ........................................

or Home Visit (circle as appropriate) ........................................

Presentation Priority (circle as appropriate) ........................................ Urgent / Routine

---

PaedsReferralFormMarch 07/2007/08/1h
Milk free diet for young children

If your child is allergic to cow’s milk you must exclude all milk and milk products from their diet.

Do not give your child their usual milk. It is recommended that you use_________________________. If this is an infant formula it will be available on prescription from your Doctor. It is made up in exactly the same way as your baby’s usual milk. There is no need to stop using this formula at one year – continue until advised to stop. Do not use supermarket milk alternatives (e.g. soya milk) for children under one year and do not use rice milk for children under the age of five years.

You must also exclude milk products from your child’s diet. If you are breastfeeding, you should try to exclude all milk and milk products from your own diet too. There is a list of foods to include and exclude on the next page.

You must also read the ingredients label on all foods. Any food which contains any of the following must be avoided:-

- Cow’s milk
- Goat’s milk
- Milk powder
- Milk drinks
- All types of cheese
- Butter
- Margarine
- Yoghurt
- Cream
- Ice-cream
- Casein
- Caseinates
- Hydrolysed casein
- Skimmed milk
- Skimmed milk powder
- Milk solids
- Non-fat milk solids
- Whey
- Whey syrup sweetener
- Ghee

Some children may grow out of their milk allergy. Following discussion with your doctor or health visitor try reintroducing milk at one year of age. If your baby’s symptoms recur, keep to the diet for a further three months before trying again.

How to reintroduce milk at one year
Add 30ml (1oz) full cream cow’s milk to your child’s bottle of special milk. Give this to your child at one feed. Do not give any more cows’ milk (or any milk products) for 48 hours. If there is no reaction after this time, start to reintroduce milk and milk products to your baby’s diet.

Note  It is important that your baby takes the total quantity of milk recommended by your Health Visitor. If they will not do this, ask for further advice.

If you have any queries, speak to your Health Visitor or Doctor.
**Foods to include / exclude from your child’s diet (and from your diet if you are breastfeeding):**

<table>
<thead>
<tr>
<th>Cow’s Milk Free Foods</th>
<th>Foods that may contain Cow’s Milk or Milk Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All varieties of meat and fish prepared and cooked without milk or milk products.</td>
<td>• Sausages.</td>
</tr>
<tr>
<td>• Sausage, fish fingers etc. (if known to be milk free).</td>
<td>• Fish in batter or crumbs or sauce made with milk or milk products.</td>
</tr>
<tr>
<td>• Eggs.</td>
<td></td>
</tr>
<tr>
<td>• Baked beans (if known to be milk free)</td>
<td></td>
</tr>
<tr>
<td>• Milk free breakfast cereals (e.g. pure baby rice, cornflakes).</td>
<td>• Baby cereals containing milk (e.g. some baby rice).</td>
</tr>
<tr>
<td>• Milk free rusks.</td>
<td>• Rusks containing milk.</td>
</tr>
<tr>
<td>• Vegetables – fresh, canned, dried, frozen, prepared and cooked without milk or milk</td>
<td>• Vegetables canned in sauce containing milk or milk products.</td>
</tr>
<tr>
<td>products.</td>
<td>• Mashed potato made with milk, butter or margarine containing milk or milk products.</td>
</tr>
<tr>
<td>• All types of fruit and fruit juice.</td>
<td></td>
</tr>
<tr>
<td>• Peanut butter.</td>
<td>• Instant desserts, instant porridge, milk puddings, milk loaf, fancy bread and buns.</td>
</tr>
<tr>
<td>• Milk free margarines, (e.g. Supermarket own brand, Vitalite or Pure sunflower and</td>
<td>• Cakes, biscuits, puddings containing milk or milk products.</td>
</tr>
<tr>
<td>soya margarines). Lard, suet, vegetable oil.</td>
<td>• Potato crisps – some varieties containing milk and milk products</td>
</tr>
<tr>
<td>• Squashes and cordials, fizzy drinks.</td>
<td></td>
</tr>
<tr>
<td>• Cocoa.</td>
<td>• Fresh, condensed, dried, evaporated, skimmed, cow’s milk.</td>
</tr>
<tr>
<td>• Sugar, glucose, jam, honey, syrup, marmalade.</td>
<td>• Malted milk drinks, (e.g. Horlicks).</td>
</tr>
<tr>
<td>• Plain chocolate.</td>
<td>• Drinking chocolate.</td>
</tr>
<tr>
<td>• Sorbet, jelly.</td>
<td>• Toffee, fudge, caramels, milk chocolate.</td>
</tr>
<tr>
<td>• Home-made soups and gravies, using milk free ingredients.</td>
<td>• Soups, sauces and gravies containing milk products.</td>
</tr>
<tr>
<td>• Baking powder, yeast, bicarbonate of soda.</td>
<td>• Monosodium glutamate with lactose filler.</td>
</tr>
</tbody>
</table>

Produced by Paediatric Dietitians, Cardiff and Vale University Health Board. April 2010

**Guideline for the management of Cow’s Milk Protein Allergy:**