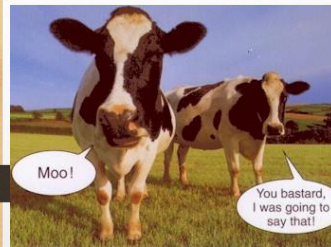


# Cow's Milk Protein Allergy

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Moo!

You bastard,  
I was going to  
say that!



How bad is Cow milk?

## Summary

- What is it? Types and terminology
- Why does it happen?
- How to treat?
- PBS guidelines?
- Lactose intolerance

## Terminology

Cow's Milk Allergy

Cow's Milk Protein Allergy

Cow's Milk Hypersensitivity

Cow's Milk Protein Intolerance

## Perception versus Evidence

- Prevalence of CMA
  - in infancy 2-6%
  - in adulthood 0.1 - 0.5%
- Based on parental perception ie clinical suspicion
  - in children < 3 years 12 - 15% up to 17% in some studies
- Self-diagnosed prevalence of CMA
  - 10-fold higher than clinically diagnosed prevalence

*(Ann Allergy Asthma Immunol 2002, Woods et al.)*

## Why is this so?

- Either
- Dairy allergy extends beyond the current diagnostic criteria
- OR
- Misdiagnosis without clinical evaluation which can lead to
    - Unnecessary eschewing of dairy products
    - Poor nutritional outcome



## Cows Milk Protein Intolerance

- Clinical
  - Time
    - adverse reactions appear soon after introduction of allergen into diet
    - immediate reaction i.e. within 1 hour - IgE mediated
    - delayed i.e. several hours to several days T-cell mediated

## Adverse Reaction to Cow's Milk

- General symptoms (anaphylaxis, failure to thrive)
- Cutaneous symptoms 30 - 70% (atopic dermatitis, urticaria, angioedema)
- Respiratory symptoms 20 - 30% (rhinitis, asthma, cough)
- **Gastrointestinal symptoms 50 - 60%**

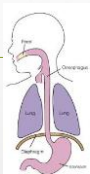
## CMPI in Gut

- CMP – 'Intolerance' or CMPI in gut
  - Non-IgE mediated
  - Cellular responses
  - Hours to days post ingestion
  - Manifestations vary depending upon section of GI tract involved

## Adverse Reaction to Cow's Milk

- Gastrointestinal symptoms
  - recurrent vomiting
  - food refusal
  - irritability/ colic
  - diarrhoea
  - constipation
  - rectal bleeding
  - malabsorption

## GIT



### CMP-induced GORD:

- Regurgitation
- Poor Feeding
- Feed Aversion
- Irritability



### Enteropathy:

- Vomiting
- Diarrhoea
- Irritability
- FTT
- PLE
- Iron Def Anaemia



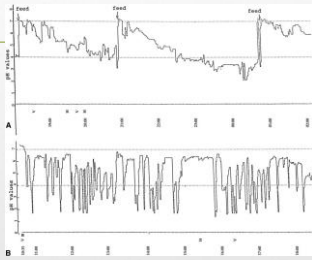
### Proctocolitis:

- Diarrhoea
- Blood +
- Mucus ++

## pH probe and GOR-CMA

- phasic pattern: Progressive and slow decrease in oesophageal pH between 2 feedings
    - 12/14 (86%) infants with GOR-CMA
    - 24/25 (96%) infants with CMA
    - 0/47 primary GOR
    - 0/49 controls
- (Carataio et al, Arch Dis Child 1996)*

## Phasic pattern in pH-probe



## Gastric emptying

- Gastric emptying is delayed in CMA (measurement by electrogastrography and electrical impedance)
  - CMA induces
    - severe gastric dysrhythmia
    - delayed gastric emptying and thus symptoms of GORD
- Generalised dysfunction of the enteric neuromusculature and thus an irritable baby  
(Ravelli et al., JPGN 2001)

## Treatment

- Options:
  - Breast feeding
  - Soya formula
  - 'partially' hydrolysed
  - 'extensively' hydrolysed
  - Amino acid based

## Treatment

- Breastfeeding – Maternal elimination diet
  - 2-4 weeks to work
  - **Dietitian** review for education
  - Calcium supplementation

## Treatment

- Soya based formula:
  - 10-25% cross-reactivity
  - Under 6 months of age
    - ↑ phytates and ↑ phyto-oestrogen (of concern)
- 'partially' hydrolysed formula:
  - No script, poor regulation
  - Marketed to reduce allergic reaction in at risk infants
  - No role in CMPA

## Treatment

- Extensively hydrolysed formulae:
  1. Pepti-Junior
  2. Alfare
  3. Allerpro

≥ 90% efficacy.

## Treatment

- Free Amino Acid Formulae:
  1. Neocate
  2. Elecare
  3. Alfamino
  4. Rice based formula Novalac

## PBS for AA formula

### INITIAL:

- In consultation with a specialist allergist, clinical immunologist or paediatric gastroenterologist
- Child up to 24 months
- Failed an extensively hydrolysed formula
- GP's can prescribe once one of the above have been consulted

## Lactose Intolerance



## Intolerance?

- Intolerance can lead to many problems



## Lactose intolerance

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- ? Common
- Loss of lactase enzyme activity in villous tips
- Enzyme loss leads to excess lactose distally
- NB: *Lactose intolerance not an allergy*

Thank you 