

**L'alimentazione del bambino...
sano, allergico, con malattia cronica**

*Una esigenza della famiglia a cui il pediatra risponde
con evidenze e... buon senso*

VI Giornate Pediatriche "A. Laurinsich"
SIPPSAGGIORNA



POLIAMBULATORIO
DALLA ROSA PRATI
Centro Diagnostico
Europeo - Parma

Parma, 26 - 27 Ottobre 2012

Centro Congressi della Camera di Commercio di Parma
via Giuseppe Verdi n°2, Parma



Le formule per il bambino allergico al latte

Alessandro Fiocchi
Parma
27 ottobre 2012





Carlo, 19 mesi

Fratello di Andrea

Mamma pollinosa

Anafilassi al latte dopo la prima somministrazione

SPT+ per latte ed uovo

Challenge positivo per latte a 12 mesi

Reazioni al contatto con piccole qtà (bacio)

Che tipo di latte consigliare?



Dietary choices in CMA

1. Treating CMA: when is a substitute necessary?
2. Choosing the right formula
3. When soy is cheaper
4. Conclusions



NIAID guidelines: avoidance

- Guideline 19: The EP recommends that individuals with documented IgE-mediated FA should avoid ingesting their specific allergen.
- Guideline 20: The EP recommends that individuals with documented non-IgE-mediated FA should avoid ingesting their specific allergen.



When can Milk Proteins be Eliminated from the Diet Without Substituting Cows Milk?

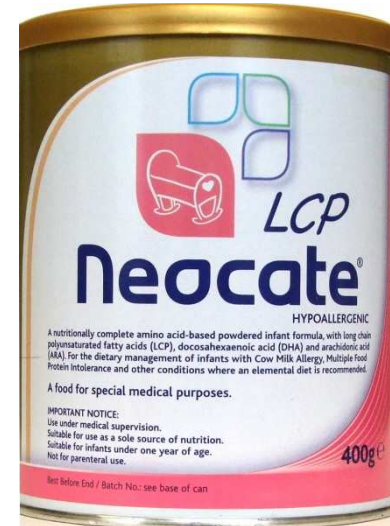
A CM-based diet is necessary until 2 years of age.

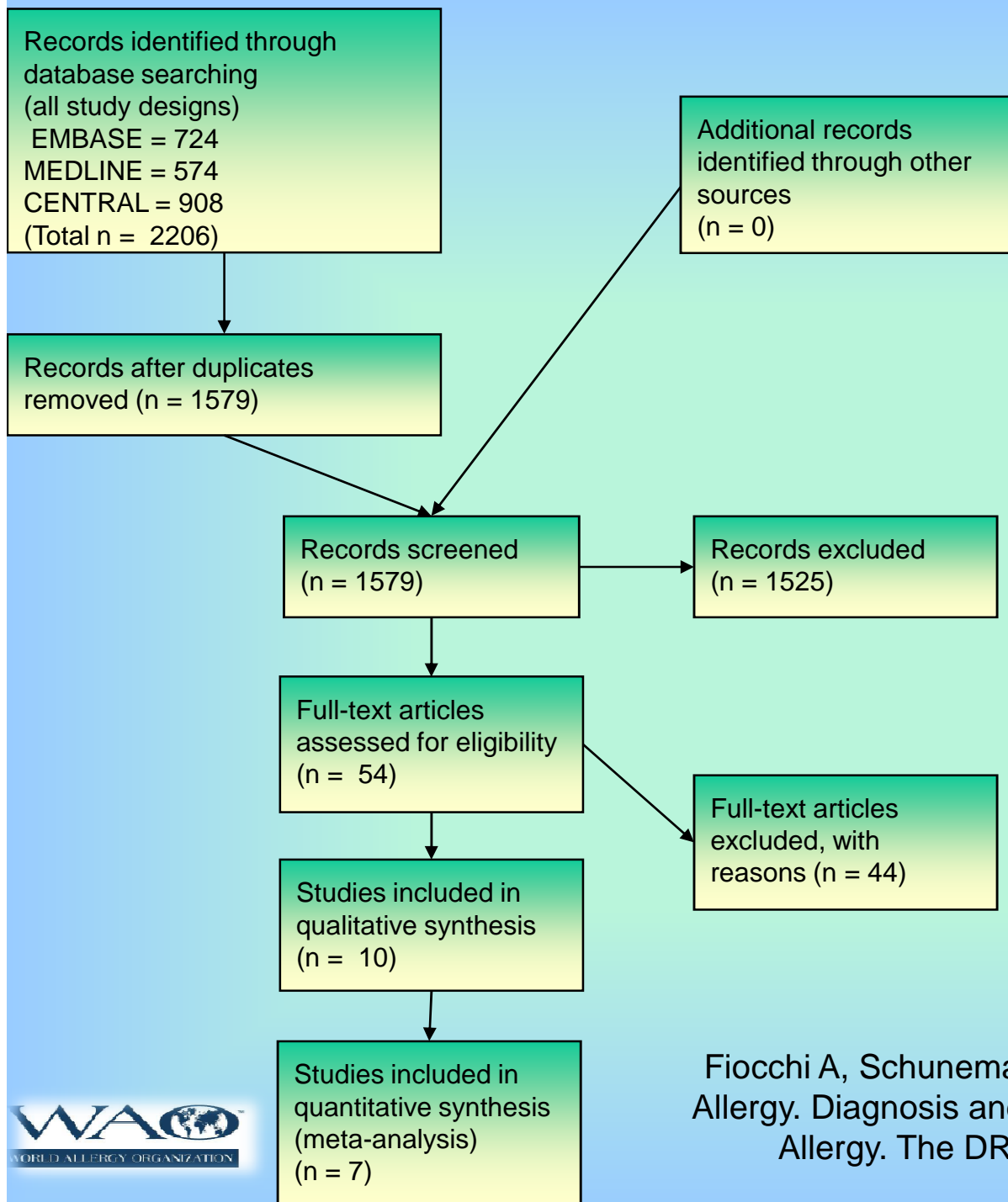
- For nonbreastfed infants, available substitutes include extensively hydrolyzed cow's milk whey and/or casein formula, soy formula, soy and rice hydrolysates, and amino acid-based formula.
- The value of such formula is subjected to GRADE evaluation
- Alternative milks will not be GRADE-evaluated and can be used on an individual basis.



Dietary choices in CMA

1. Treating CMA: when is a substitute necessary?
2. Choosing the right formula
3. When soy is cheaper
4. Conclusions





CMA treatment

PRISMA diagram

Should extensively hydrolysed milk, soy, amino acid or extensively hydrolysed rice formula be used in patients with cow's milk allergy?

Fiocchi A, Schunemann H. WAO Special Committee on Food Allergy. Diagnosis and Rationale for Action against Cow's Milk Allergy. The DRACMA guideline. WAO Journal 2010; S1 (April), 1-105

Undesirable characteristics: allergy

	Importance
Severe symptoms of CMA (severe laryngeal edema, severe asthma, anaphylaxis)	9
Allergic reaction to protein in the formula	7
Moderate symptoms of CMA (mild laryngeal oedema, mild asthma)	7
Failure to thrive	7
Enteropathy, entero/proctocolitis	7
Protein and fats deficiency	7
Iron, calcium, vitamin D, and other minerals and vitamins deficiency	7
Resource utilisation (costs)	7
Mild symptoms of CMA (erythema, urticaria, angioedema, pruritus, vomiting, diarrhoea, rhinitis, conjunctivitis)	7
Quality of life of a patient	6
Duration of CMA	6
Unpleasant taste (child may refuse to take the formula)	6
Quality of life of caregivers	6
Anthropometric values	6

Undesirable characteristics: nutrition

	Importance
Severe symptoms of CMA (severe laryngeal edema, severe asthma, anaphylaxis)	9
Allergic reaction to protein in the formula	7
Moderate symptoms of CMA (mild laryngeal oedema, mild asthma)	7
Failure to thrive	7
Enteropathy, entero/proctocolitis	7
Protein and fats deficiency	7
Iron, calcium, vitamin D, and other minerals and vitamins deficiency	7
Resource utilisation (costs)	7
mild symptoms of CMA (erythema, urticaria, angioedema, pruritus, vomiting, diarrhoea, rhinitis, conjunctivitis)	7
Quality of life of a patient	6
Duration of CMA	6
Unpleasant taste (child may refuse to take the formula)	6
quality of life of caregivers	6
Anthropometric values	6

Undesirable characteristics: QoL & socioeconomic

	Importance
Severe symptoms of CMA (severe laryngeal edema, severe asthma, anaphylaxis)	9
Allergic reaction to protein in the formula	7
Moderate symptoms of CMA (mild laryngeal oedema, mild asthma)	7
Failure to thrive	7
Enteropathy, entero/proctocolitis	7
Protein and fats deficiency	7
Iron, calcium, vitamin D, and other minerals and vitamins deficiency	7
Resource utilisation (costs)	7
mild symptoms of CMA (erythema, urticaria, angioedema, pruritus, vomiting, diarrhoea, rhinitis, conjunctivitis)	7
Quality of life of a patient	6
Duration of CMA	6
Unpleasant taste (child may refuse to take the formula)	6
Quality of life of caregivers	6
Anthropometric values	6

Recommendation 7. 1

- In children with IgE-mediated cow's milk allergy at **high risk of anaphylactic reactions** (prior history of anaphylaxis and currently not using extensively hydrolysed milk formula), we suggest **amino acid formula** rather than extensively hydrolysed milk formula (conditional recommendation | very low quality evidence).

Underlying values and preferences

- This recommendation places a relatively **high value on avoiding possible anaphylactic reactions** and a **lower value on avoiding the direct cost** of amino acid formula in settings where the cost of amino acid formulas is high.

Remark

- In controlled settings a trial feeding with an extensively hydrolysed milk formula may be appropriate



Expensive, but
necessary

Fiocchi A, Schunemann H. WAO Special Committee on Food Allergy. Diagnosis and Rationale for Action against Cow's Milk Allergy. The DRACMA guideline. WAO Journal 2010; S1 (April), 1-105

Recommendation 7. 2

In children with IgE-mediated cow's milk allergy at **low risk of anaphylactic reactions** (no prior history of anaphylaxis or currently on extensively hydrolysed milk formula), we suggest **extensively hydrolysed milk formula over amino acid formula** (conditional recommendation | very low quality evidence).

Underlying values and preferences

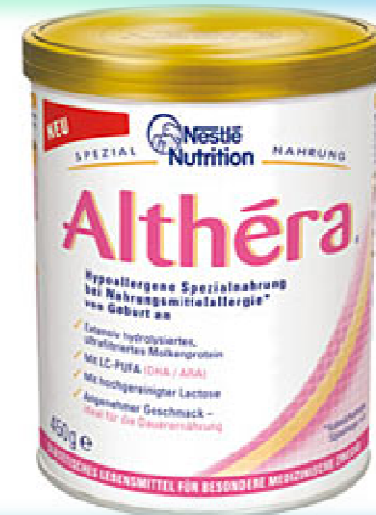
This recommendation places a relatively **high value on avoiding the direct cost of amino acid formula** in settings where the cost of amino acid formula is high. In settings where the cost of amino acid formula is lower the use of amino acid formula may be equally reasonable.

Remark

Extensively hydrolysed milk formula should be tested in clinical studies before being used. (American Academy of Pediatrics Committee on Nutrition 2000) If a new formula is introduced, one should carefully monitor if any adverse reactions develop after first administration.



- Controlled risk of sensitisation
 - less expensive
- low risk of anaphylactic reactions



Fiocchi A, Schunemann H. WAO Special Committee on Food Allergy. Diagnosis and Rationale for Action against Cow's Milk Allergy. The DRACMA guideline. WAO Journal 2010; S1 (April), 1-105

Recommendation 7.3

- In children with IgE-mediated cow's milk allergy, we suggest **extensively hydrolysed milk formula rather than soy formula** (conditional recommendation | very low quality evidence).

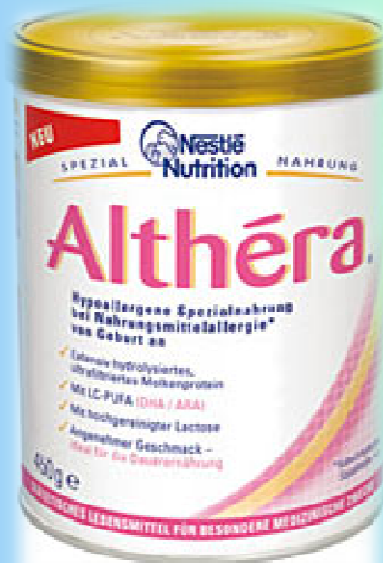
Underlying values and preferences

- This recommendation places a relatively **high value on avoiding adverse reactions to soy formula**, and a relatively **low value on** an inferior acceptance of the extensively hydrolysed formula and **resource utilization**. In settings where relative importance of resource expenditure is lower an alternative choice may be equally reasonable.

Remark

- Soy should not be used in first 6 months of life, because of nutritional risks.

Fiocchi A, Schunemann H. WAO Special Committee on Food Allergy. Diagnosis and Rationale for Action against Cow's Milk Allergy. The DRACMA guideline. WAO Journal 2010; S1 (April),



- Growth, (length and weight for age z-score) adequate, but trend towards improved growth in extensively hydrolysed formula compared to soy formula
- Fewer children had allergic reaction to extensively hydrolysed formula than to soy formula (relative risk: 0.18; 95% CI: 0.05 to 0.71)
- Fewer children developed secondary sensitization to eHF than to soy formula

Fiocchi A, Schunemann H. WAO Special Committee on Food Allergy. Diagnosis and Rationale for Action against Cow's Milk Allergy. The DRACMA guideline. WAO Journal 2010; S1 (April), 1-105

Should we
ban all milks
because of
CMA?

Jarvinen K.
Mammalian Milk
Allergy:
Clinical Suspicion,
Cross-
Reactivities and
Diagnosis
Curr Opin Allergy
Clin Immunol
2009; 9:234-7

Class: mammalia

Superorder: Laurasiatheria

Order: Artiodactyla

Order: peryssodactyla

Family: Bovidae

Family: Suidae

Family: Camelidae

Subfamily: bovineae

Subfamily: caprinae

Superorder: Eurarchonteria



TABLE 17-1. Indications

Clinical Presentation	1st Choice	2nd Choice	3rd Choice
Anaphylaxis	AAF*	eHF ^{§,¶}	SF
Immediate gastrointestinal allergy	eHF ^{†,§}	AAF /SF**	
Food protein-induced enterocolitis syndrome (FPIES)	eHF [†]	AAF	
Asthma and rhinitis	eHF ^{†,§}	AAF /SF**	
Acute urticaria or angioedema	eHF ^{†,§}	AAF /SF**	
Atopic dermatitis	eHF ^{†,§}	AAF /SF**	
Gastroesophageal reflux disease (GERD)	eHF [†]	AAF	
Allergic eosinophilic oesophagitis	AAF		
Cow's milk protein-induced enteropathy	eHF ^{†,§}	AAF	
Constipation	eHF [†]	AAF	Donkey milk ^{§§}
Severe irritability (colic)	eHF [†]	AAF	
CM protein-induced gastroenteritis and proctocolitis	eHF [†]	AAF	
Milk-induced chronic pulmonary disease (Heiner's syndrome)**	AAF	SF	eHF

*Recommendation 7.1.

Fiocchi A, Schunemann H. Diagnosis and Rationale for Action against Cow's Milk Allergy. The WAO DRACMA guideline. WAO Journal & Pediatric Allergy

[§]Subject to local availability,

HRF can be considered instead than eHF (7.4).

^{††}Subject to local availability.

^{††}This suggestion attributes a high value on avoiding exposure to even residual antigenic cow's milk proteins.

^{§§}Based on reports from one case series (section 15).

^{¶¶}Given that more than 50% of such children are allergic to soy, a careful clinical evaluation is necessary (panel recommendation).

Resource utilisation (costs)

Milk/formula	Cost per liter	Cost per month (Euro)
Amino Acid formula 2.5 times the expense for a eHF and 3 times that of soy formula		
Extensively hydrolysed CM formula	6.5	120
Amino acid formula	14	135
		318



Dietary choices in CMA

1. Treating CMA: when is a substitute necessary?
2. Choosing the right formula
3. When soy is cheaper
4. Conclusions

Recommendation 7.3

- In children with IgE-mediated cow's milk allergy, we suggest **extensively hydrolysed milk formula rather than soy formula** (conditional recommendation | very low quality evidence).

Underlying values and preferences

- This recommendation places a relatively **high value on avoiding adverse reactions to soy formula**, and a relatively **low value on an inferior acceptance of the extensively hydrolysed formula and resource utilization**. **In settings where relative importance of resource expenditure is higher an alternative choice may be equally reasonable.**

Remark

- Soy should not be used in first 6 months of life, because of nutritional risks.

Fiocchi A, Schunemann H. WAO Special Committee on Food Allergy. Diagnosis and Rationale for Action against Cow's Milk Allergy. The DRACMA guideline. WAO Journal 2010; S1 (April),

When soy formula is less expensive

- Variation in cost structure in economies beyond Europe
- Soy formula is far cheaper than hydrolyzed formulae in Iran, Brazil, Malaysia, Louisiana, Albania, Macedonia, Bulgaria
- The pro-capita income is lower in some countries
- Recommendation 7.3 - tailored for economies where a minor difference in costs and higher-income families adds a premium on the greater safety of the hydrolysate over soy formula – can be applied differently

Recommendation 7.3

- In children with IgE-mediated cow's milk allergy, we suggest **extensively hydrolysed milk formula rather than soy formula** (conditional recommendation | very low quality evidence)

Underlying values and preferences

- This recommendation places a relatively **high value** on **avoiding adverse reactions to soy formula**, and a relatively **low value** on an inferior acceptance of the extensively hydrolysed formula and **resource utilization**. In settings where relative importance of resource expenditure is lower an alternative choice may be equally reasonable.

Remark

- Soy should not be used in first 6 months of life, because of nutritional risks.



Dietary choices in CMA

1. Treating CMA: when is a substitute necessary?
2. Choosing the right formula
3. When soy is cheaper
4. Conclusions



Carlo, 19 mesi

Fratello di Andrea

Mamma pollinosa

Anafilassi al latte dopo la prima somministrazione

SPT+ per latte ed uovo

Challenge positivo per latte a 12 mesi

Reazioni al contatto con piccole qtà (bacio)

Miscela di amino acidi! (HRF, eHF)



Conclusions

- Guidelines allow an evidence-based approach to CMA
 - Their interpretation should be flexible
 - Patient values matter
 - Economic values matter



Bambino Gesù
OSPEDALE PEDIATRICO

- I farmaci generici sono davvero equivalenti?
- L'asma persistente non si deve più trattare in modo continuo
- I risottoni di integratori per la prevenzione delle IRR
- Le camere del sale. Sparite!
- Alimenti solidi e svezzamento
- La desensibilizzazione per alimenti