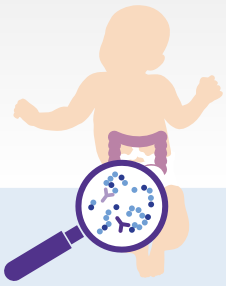
DIETARY MANAGEMENT OF COW'S MILK ALLERGY (CMA) CLINICAL BENEFITS OF SYNBIOTICS

CMA is common in infants and children, presenting with a range of symptoms affecting the gastrointestinal (GI) tract, skin and respiratory tract[1-3]. The gut microbiota plays a pivotal role in the development of the immune system. However, research has shown that infants with CMA have an altered gut microbiome compared with healthy breastfed infants. In addition, infants with CMA also face an increased susceptibility to infections compared with infants and children without CMA[4]. The impact of CMA goes beyond the clinical symptoms, impacting families and the wider healthcare system.

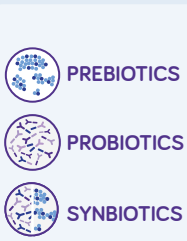


Breastmilk composition contains a wide range of important bioactive compounds which promote a healthy gut microbiota and immune system development[5]. Breastfeeding should be encouraged, however recognising that this is not always feasible for allergic infants, there has been a drive to develop hypoallergenic formulas with properties that mimic some of the bioactive compounds present in breastmilk.

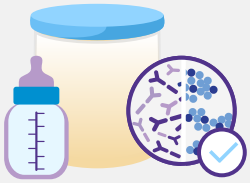
Synbiotics are a combination of prebiotics (substrates that are selectively utilised by host microorganisms conferring a health benefit[6]) and probiotics (live microorganisms which when administrated in adequate amounts confer a health benefit on the host[7])[8].

New innovations have allowed formula advancements with the inclusion of synbiotics. New innovations have allowed formula advancements with the inclusion of synbiotics in extensively hydrolysed formulas (eHF) and amino acid based formulas (AAF).

Studies have shown that hypoallergenic formulas with synbiotics support the gut microbiota in infants with CMA, prompting favourable shifts in gut microbial composition that are more reflective of the gut microbiota of healthy breastfed infants. Evidence consistently shows positive effects of synbiotics on immune-related outcomes[9-13].



CLINICAL STUDIES



To date, several studies have been conducted with hypoallergenic formulas with a unique blends of synbiotics (eHF: B. breve M-16V and scGOS/lcFOS[10,14,15] and AAF: B. breve M-16V and scFOS/lcFOS[9-14,16]). Results have consistently demonstrated that these formulas are well tolerated, have a good safety profile, and support normal growth. Exploratory outcome data* from these studies have reported additional interesting and clinically relevant findings.

Medication use

- Reduced need for medication for functional GI disorders[11]
- Lower percentage of infants required antibiotics[9,11]
- Lower use of dermatological medication[12]
- Reduction of asthma medication at one year follow up[14]

Hospitalizations

- Fewer hospitalizations due to infections[13]

Dermatological symptoms

- Demonstrated greater improvement of atopic dermatitis**[10]

Respiratory

- Lower prevalence of asthma-like symptoms at one year follow-up[14]

Infections

- Fewer infections[11] and GI infections[13]
- Fewer ear infections[12]

GI

- Improved stool consistency and colour, closer to those of healthy breastfed infants[16]
- Reduction in constipation and dry stools[10]

= eHF related research
= AAF related research

* based on evaluation of adverse events and safety parameters in studies in infants with CMA receiving an hypoallergenic formula with synbiotics in comparison with hypoallergenic formula without synbiotics.
** in the subgroup of infants with IgE-associated atopic dermatitis.

REAL WORLD EVIDENCE (RWE) STUDIES

Randomised controlled trials (RCTs) and RWE studies are often considered complementary[17,18]. To date, RWE studies in CMA infants given eHF or AAF with a synbiotic blend have shown consistent results with published RCTs.

Hubbard et al. (2022)[19]

Single-arm, prospective study of CMA infants receiving eHF with synbiotics

- Improvements in severity of abdominal pain, burping, flatulence, constipation
- Improvements in atopic symptoms including rhinitis and itchy eyes
- Reduction in hospital visits and medications in the six months follow-up
- Improvements in caregiver reported quality of life

Sorensen et al. (2021)[20]

Retrospective matched cohort comparing case records of CMA infants managed with AAF with synbiotics or AAF without synbiotics, found AAF with synbiotics to be associated with

- Lower rate of healthcare contacts
- Lower rates of infections and medication prescriptions
- Fewer GI, skin and/or respiratory symptoms
- Potential healthcare cost-savings

SYSTEMATIC REVIEW

Sorensen et al. (2021)[21]

Meta-analysis of four RCTs of CMA infants receiving AAF with synbiotics compared to AAF without synbiotics

- Significantly fewer infections
- Lower overall medication use
- Fewer hospital admissions

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