



KAREN MAXWELL
Community Paediatric
Dietitian, Kent

The management of a cow's milk allergic infant with an amino-acid based formula containing synbiotics

BACKGROUND

B was born by vaginal delivery at 36 weeks. He was referred to the dietetic service at 7 months of age due to poor feed tolerance and inability to move onto solids. Due to COVID-19 restrictions all assessments were carried out over the phone or by video consultation.

GROWTH AND FAMILY HISTORY

B was born at 2.1kg, 7th centile, and prior to referral he had improved up to the 15th centile and length of 32nd centile. Due to the lockdown there were few growth measurements available to compare.

B had an atopic family history, with father having cow's milk protein allergy (CMPA) as an infant which he grew out of before 1 year of age, and mother had hay fever as a child and had developed an allergy to wheat about 8 years ago. She had been diagnosed with asthma and irritable bowel syndrome.

HISTORY

B was initially breast fed, however, due to poor feeding he moved onto a bottle with standard infant formula after a few weeks. As volumes increased, he developed breathing issues and a paediatrician diagnosed reflux.

B was trialled with a "comfort" specialist formula milk, then Gaviscon which did not seem to help, followed by Omeprazole which improved the symptoms slightly. At 3 months of age, he was changed to an extensively hydrolysed formula (EHF) that contained probiotics, which settled his symptoms. Shortly after, the Omeprazole was discontinued and B experienced no increase in symptoms. He was not rechallenged with standard infant formula to confirm CMPA diagnosis.

Weaning commenced at 6 months with baby rice and EHF which he tolerated. When B consumed banana he displayed discomfort and "grunting" for the entire duration of the day after ingestion. Weetabix with almond milk, and potato with EHF caused constipation with vomiting several hours after ingestion. Avocado was given and B required medical assessment at Accident and Emergency due to profuse vomiting. It was recommended to revert back to just EHF for 2 weeks before starting solids again and his symptoms settled. During this time there was no further vomiting and normal paste-like green stools returned.

After two weeks, B was given a shop-bought apple puree which he tolerated. Pureed carrot was given and B developed sickness and diarrhoea, with severe nappy rash, requiring steroid cream prescribed from GP.

DIETETIC MANAGEMENT

The progression of solid foods was needed. It was agreed that the family would try to introduce well cooked foods with low allergenic risk, starting with lipstick swipes and increasing to small amounts to ingest to ensure no severe reactions. Oral stimulation was discussed to ensure he did not become aversive.

At review 1 week later, apple had been tolerated, however, courgette caused severe diarrhoea 4-5 hours later. B was consuming predominantly EHF, he was now opening his bowels up to 13 times a day and experienced nappy rash.

An amino acid-based formula containing synbiotics (Neocate Syneo) was trialled exclusively for 7 days. B switched directly over to this with no issues with taste, and within 2 days his bowel motions had reduced to 6-7 per day and the nappy rash was healing. By day 7, B was passing normal stools once a day. His weight had been measured and he was tracking centiles.

An amino acid based, spoonable supplementary feed (Neocate Spoon) was introduced, and over the following month B was consuming a basic diet containing foods from the main food groups with no oral aversion. Over the next month other allergens were introduced (wheat, soya, egg, nuts, fish), as well as foods he had reacted to except cow's milk and avocado. Neocate Spoon was discontinued and B's weight had increased to 25th centile.

At 1 year of age B started the milk ladder which has been well tolerated, however, B is now aged 20 months and not fully on cow's milk. B has been able to transition from Neocate Syneo onto a fortified age appropriate cow's milk alternative.

“We should consider the effect of our feeding choices on an infant's microbiome.”

DISCUSSION AND SUMMARY

The multidisciplinary care team hypothesised that B was an atopic child with CMPA with an "immature gut" and had had an intercurrent infection at a very critical time of food exposure. There is a building body of evidence that suggests that in this type of case, synbiotics rather than just probiotics may be beneficial.^{1,2} For B it was interesting that an amino acid formula with synbiotics was required for full symptom resolution.

This case required intensive dietetic input. B had a family who could follow very specific advice. The reason we did not see faltering growth was that the child was hungry and willing to eat and drink despite his symptoms. The case was made much more

challenging by COVID-19 and the inability to physically see the child, and limited access to medical or growth assessments.

One key learning from this case is that sometimes you need to go back to basics to move forward; we should consider the effect of our feed choices on an infant's microbiome. 🙌

IMPORTANT NOTICE:

Breastfeeding is best. Neocate Syneo and Neocate Spoon are foods for special medical purposes for the dietary management of Cow's Milk Allergy, Multiple Food Protein Allergies and other conditions where an amino acid based formula is recommended. Comfort is a food for special medical purposes for the dietary management of colic and constipation. They should only be used under medical supervision, after full consideration of the feeding options available including breastfeeding. Neocate Syneo and Comfort are suitable for use as the sole source of nutrition for infants under one year of age. Neocate Spoon is suitable for infants and children over 6 months of age. Not suitable as a sole source of nutrition. Infant milk is suitable from birth, when babies are not breastfed and should only be used on the advice of a doctor, dietitian, pharmacist, or other professional responsible for maternal and child care. Refer to the label for details.

References:

1. Navarro-Tapia E, et al. Probiotic Supplementation during the Perinatal and Infant Period: Effects on gut Dysbiosis and Disease. *Nutrients*. 2020;12(8): 2243.
2. Islek A, et al. The role of Bifidobacterium lactis B94 plus inulin in the treatment of acute infectious diarrhea in children. *Turk J Gastroenterol*. 2014;25(6):628-33.