Case Study

The use of Amino Acid Formula in the dietary management of severe infant Cows' Milk Allergy

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Approximately 2-7.5% of infants have symptoms of CMA[1] whilst symptoms suggestive of Cows' Milk Allergy (CMA) may be encountered in up to 15% of infants, emphasising the importance of controlled elimination/milk challenge procedures[2]. The diagnosis and treatment pathways for cases of CMA are well documented and several guidelines exist to support the healthcare professional in successfully diagnosing and treating infants with CMA[3-8]. The role of Amino Acid formulas in severe cases of CMA has been shown to be beneficial and to help improve quality of life[9,10].

Patient's background/medical history/physical/diagnosis

Visit 1

Early in 2014, a 7 month old baby girl presented at RMCH with treatment resistant atopic dermatitis (eczema) and concomitant gastric oesophageal reflux, for which she was on anti reflux medication. The patient's weight was 6.3kg and she was on the 9th percentile. The patient's family history was taken and allergy atopy was identified, as well as a zinc deficiency and skin infections for which antibiotics had been prescribed.

The baby was being breast fed by her mother who had tried eliminating wheat and dairy from her diet, as the patient's older sibling had a wheat allergy.

Interventions

The mother was given strict dairy avoidance dietary advice and was asked to take calcium and vitamin D supplements. The patient's anti reflux medications were increased. Breast feeding continued and the infant was given zinc supplements. Advice was given to continue dairy product elimination through weaning.

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Case Study, cont.

Visit 2

3 months later the patient re-presented with sever discoid eczema and food associated enterocolitis. She was diagnosed with a severe non IgE mediated food allergy. Her weight had not increased significantly (6.62kg) and she was now between the 0.4th and the 2nd percentile, now faltering in growth with zinc and vitamin D deficiency. Her mother was still breast feeding and was now avoiding eggs, dairy products, wheat and nuts. The patient had episodes of loose stools, although her reflux was settling.

The patient was not sleeping due to the itchiness of the skin and was admitted to the ward directly from the clinic.

Feeding with an amino acid based formula (Alfamino®, Nestlé Health Science) was initially via a nasogastric tube. This was started with a target volume of 120 ml/kg, every 3 hours (6-7 feeds per day). After intervention from the play therapist bottle feeding was able to commence after 24 hours.

Results

Within 3 days the child was sleeping better and the eczema on her face and body was beginning to settle. She was discharged from the ward with zinc and vitamin D supplements and Alfamino® formula.

After 1 month the patient was reviewed. She had gained 1.1kg in weight (just under the 25th percentile) and the eczema had improved considerably with a reduction in itchiness, redness and inflammation. Her mother noticed she was also sleeping better. Odd bouts of diarrhoea still occurred but the reflux had resolved and medications had been stopped. Weaning was in progress with the reintroduction of low atopic risk foods. She continued with the amino acid formula.

Discussion

Upon reflection this young infant who was sensitive to breast milk and had faltering growth responded well to an amino acid formula. Due to her symptoms presented in clinic, it was not appropriate to use an extensively hydrolysed formula (eHF) as she had experienced a drop in growth centile and there was a risk she would not respond to an eHF based on her clinical history. Alfamino® was chosen for palatability reasons (a blind tasting had been conducted in the department between all available formulas) and because of the high MCT content (24.4% of total fat) to help with loose stools. Severe symptoms of CMA can cause high levels of stress and anxiety and this patient and her family had significant reductions in quality of life as a result. The patient's mother was desperate for help to get her daughter back on track.

Conclusions

Amino acid formulas have an important role to play in the treatment of severe cows' milk allergy symptoms. Alfamino® was well tolerated and palatable, helping to improve quality of life and has been a successful choice of formula for this baby with severe faltering growth.

References: 1. Ludman et al. BMJ 2013; 247:F5424. **2.** Host. Ann Allergy Astma Immunol. 2002; 89:33-37.(2002). **3.** CEA. **4.** COACI **5.** ESPGHAN **6.** DRACMA **7.** VENTER et al **8.** NICE 2011 **9.** Vanderplas et al Arch Dis Child 2007; 92:902 - 908. **10.** Niggemann B, Binder C, Dupont C, Hadji S, Arvola T, Isolauri E: Prospective, controlled, multi-center study on the effect of an amino-acid-based formula in infants with cow's milk allergy/intolerance and atopic dermatitis. Pediatr Allergy Immunol 2001, 12(2):78–82.

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