



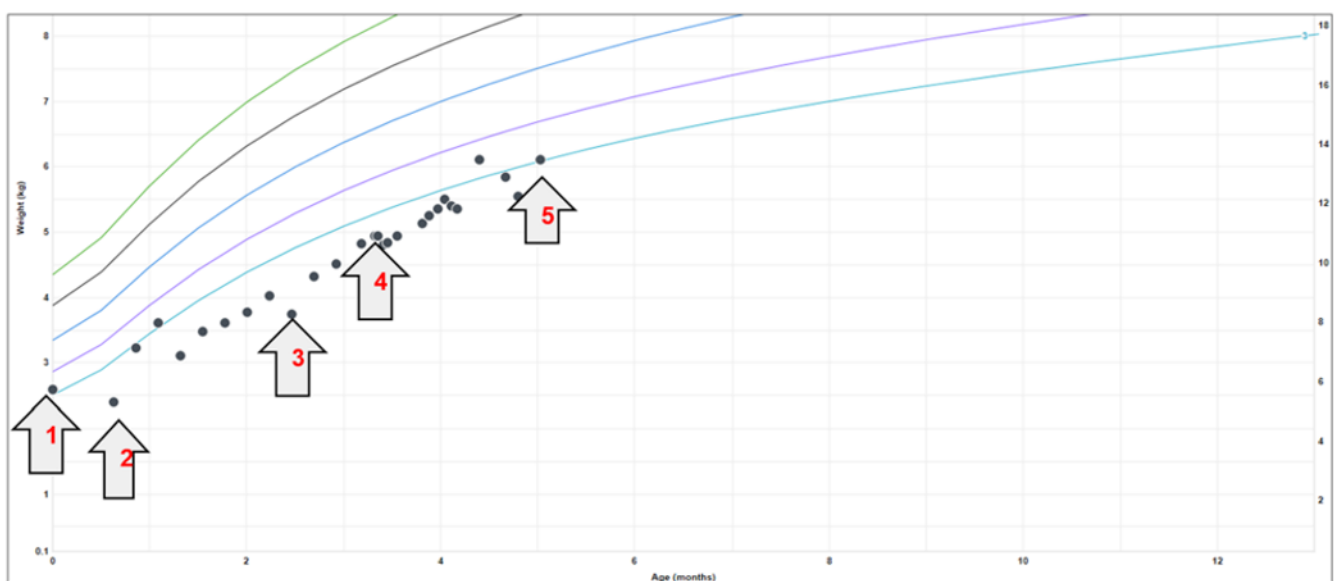
Feeding intolerance in an intensive care setting: Neocate® Infant DHA/ARA resulted in improved gastrointestinal tolerance and growth over time

PATIENT HISTORY:

Baby A was a 20-day-old male, born at term, who was admitted to the pediatric intensive care unit (PICU) for fever, and cough and was found to be positive for respiratory syncytial virus (RSV). He developed respiratory failure and was intubated for about two weeks during his long and complicated hospital stay of 83 days. After admission, he developed acute kidney injury and was diagnosed with congenital nephrotic syndrome (CNS), and later in his hospital stay, he developed a cow milk allergy. His feeding regimen changed several times and, ultimately, his gastrointestinal symptoms resolved after switching to Neocate Infant DHA/ARA.

NUTRITIONAL MANAGEMENT:

When Baby A was admitted, he had been consuming some human milk, he was primarily taking standard cow milk-based infant formula from birth. Initially, he was taking feeds by mouth, ad lib, and on hospital day 1 his weight was 2.4kg (z-score -3.52, see Figure 1). On hospital day 2, Baby A was intubated, and the registered dietitian (RD) identified acute, illness-related, moderate malnutrition related to intake not meeting energy needs as evidenced by weight z-score -2.56 and weight gain velocity < 50% of the goal. On hospital day 3 feeds were started via a nasogastric tube (NG) of a standard cow-milk-based infant formula at 20 kcal/oz then increased to 22 kcal/oz. Due to Baby A's CNS, a nephrologist ordered a fluid restriction increasing the caloric density to 24kcal/oz and changing to a partially hydrolyzed formula (pHF). Baby A developed loose stools on hospital day 14, which were attributed to antibiotics. At that time, the 24 kcal/fl oz pHF was continued and feeds were compressed to bolus with oral / NG feeds ongoing.



NOTE: Weights are recorded in the growth chart of the electronic medical record on a weekly basis from the day of admission

1. Birth weight 2.59 kg (z-score -1.68)
2. Initial admission weight 2.4kg (z-score -3.52)
3. Hospital day 56 3.74 kg (z-score -3.67), switched to Neocate Infant DHA/ARA
4. Discharge from initial admission on hospital 4.32 kg (z-score -2.84)
5. Most current weight from subsequent admission, February 24, 2023 6.11 kg (z-score -1.85)

On hospital day 29 he developed respiratory distress and an acute taut, distended abdomen. He was made NPO for less than 19 hours and as a result the loose stools quickly resolved. However, feeds were restarted with the 24 kcal/fl oz pHF with an additional protein modular despite RD recommendations because the physicians attributed his feeding intolerance to respiratory symptoms. He continued this regimen, and by hospital day 45 he was taking almost all of his 24 kcal/oz pHF by mouth. On hospital day 48 the nephrologist requested another decrease in volume and increased protein and the formula was concentrated to 26 kcal/fl oz. Five days later, he developed diarrhea with frank blood as well as significant gastroesophageal reflux, taking less by mouth. A gastroenterologist was consulted and recommended Neocate Infant DHA/ARA due to concern of cow milk protein allergy, evidenced by a positive fecal occult blood test. His feedings were changed to Neocate Infant DHA/ARA at 26 kcal/fl oz with amino acid-based protein modular added to keep protein goal of 3.5-4 g/ kg. The patient continued to have loose stools, thought to be related to the osmotic load (per gastroenterologist) and caloric density eventually decreased to 22 kcal/fl oz with the same protein goal. Stool output returned to normal within two days. The patient remained on Neocate Infant DHA/ARA at 22 kcal/fl oz with the amino acid-based protein modular throughout the hospital course and was discharged home on Neocate Infant DHA/ARA at 22 kcal/fl oz with the amino acid-based protein modular.



CONCLUSION:

Baby A had a complicated medical course which included congenital nephrotic syndrome, malnutrition, feeding intolerance with diarrhea, bloody stool, gastroesophageal reflux, and cow milk allergy. He achieved normal stool output, and his growth began to improve after his formula was switched to Neocate Infant DHA/ARA. This case study focuses on the resolution of gastrointestinal symptoms including diarrhea, gastroesophageal reflux, and bloody stools when feeds were changed to an amino acid-based infant formula, Neocate Infant DHA/ARA. When the patient developed the first onset of diarrhea it was attributed to antibiotics, however, it may have been the initial onset of gastrointestinal symptoms of a cow milk allergy. Ultimately, introducing Neocate Infant DHA/ARA proved to resolve his gastrointestinal symptoms and in turn, improved growth.

References:

1. Congenital Nephrotic Syndrome | Johns Hopkins Medicine
2. Boyer Q, Schaefer F, Haffner D, et al. Management of congenital nephrotic syndrome: consensus recommendations of the ERKNet-ESPN Working Group [published correction appears in Nat Rev Nephrol. 2021 Jun;17(6):434]. Nat Rev Nephrol. 2021;17(4):277-289. doi:10.1038/s41581-020-00384-1

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Neocate® is a family of hypoallergenic, amino acid-based medical foods and is intended for use under medical supervision. Neocate® Junior is indicated for the dietary management of cow milk allergy, multiple food allergies and related GI and allergic conditions, including eosinophilic esophagitis, food protein-induced enterocolitis, short bowel syndrome, malabsorption, and gastroesophageal reflux related to food allergies.

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