

QA63 – Trisomy 13 with Feeding Problems

Question:

I have a male, born @ 32wks with a corrected age of 1 month. Length at corrected age is at 10-25%ile; wt is at 50%ile corrected; and W/length is at 75-90%ile. He has a diagnosis of mosaic trisomy 13 and chronic lung disease. He has a nasal canula and has poor feeding tolerance. He is being worked up for GER. Baby has been in 3 different hospitals, each with a different recipe for 30 kcal/oz formula (1) breast milk + HMF + Microlipid; (2) breast milk + Promod + Neosure; and most recently (3) 90cc breast milk + 2.25 tsp Neosure. He gets exhausted feeding and requires frequent burping. He takes 3oz (at most) per feeding q 3 hrs.

Fluid overload has been a problem in the past because of his lungs but is now controlled with Lasix. He also gets iron, H₂O soluble Vit E and Polyvisol. I have estimated his needs to be 400-740 kcal (108 kcal/kg is the RDA for age vs. 200 kcal/d BPD); 8 gm protein (RDA); 370 cc fluid (100cc/kg). Is my perception correct?

His linear growth velocity hasn't kept up with weight gain resulting in W/Lth 75-90%ile. Is it reasonable to strive for continued wt gain @ normal rate (25-35gm/day); 8 gm pro/d; fluid balance. I was thinking weigh daily; check length monthly and getting an OT consult for feeding issues. Wondering why the H₂O soluble Vit E? Your thoughts would be much appreciated.

ANSWER:

What are this baby's specific nutrient needs? How best to meet those needs? The past nutritional and growth history of this infant, as well as current growth, feeding and medical status of this baby are all factors that need to be considered in answering these questions. During hospitalization, this infant may have had different nutrient needs related to prematurity and medical status. Medications may have further altered this infant's nutrient needs.

At one month corrected age, a premature infant may have the nutrient needs of a term infant. Hence, one might use the RDA as a starting point. Medical and genetic factors, however, may alter the specific needs of this infant. With CLD and feeding difficulties, this infant may have higher energy needs and be unable to take in adequate volume to meet energy and protein needs. Steroids and diuretics may further alter these needs.

Trisomy 13 is a condition associated with alterations in growth, neurodevelopmental delays, and poor survivability. Infants with mosaic Trisomy 13 may have less severe complications, and may survive longer. But these factors may further alter the infant's needs.

With these considerations in mind, one may do an assessment of the individual infant and the infant's growth pattern to determine actual needs. This infant appears to have had reasonable growth in the past. The formula the infant was feeding would appear to be adequate from an energy point of view.

Again, using the RDA as a starting point, is the infant's vitamin and mineral needs being met at current volume and type of formula? If so, then the current feeding plan would appear to be correct. The need for additional supplements (i.e. vitamin E) would need to be evaluated based on history and rationale.

Further evaluation of "what formula should baby be on" (in addition to does it meet needs and is it supporting growth) may factor in cost, availability, ease of preparation, and tolerance. Alternatives may be selected if there is a burden associated with its use and a "non burdensome" alternative is available.

Reference:

- 1) Smith's Recognizable Patterns of Human Malformation, 5th ed, 1997, Saunders;
Editor- Kenneth Lyons Jones.