Ex-utero growth retardation is a serious problem for very preterm infants and associated with long-term low growth and cognitive impairment. A dose-dependent association between early postnatal growth and neurodevelopmental outcomes has been demonstrated [1].

The current aim is to prevent preterm infants dropping percentiles and falling below the 10th percentile at 36 weeks’ corrected gestational age or discharge home. Human milk is the feed of choice, and is fortified to achieve recommended dietary intakes (RDI) for preterm infants, and growth rates similar to those in utero.

Fortifiers are powder or liquid and based on intact or hydrolyzed bovine protein. Fortification is usually standardized based on assumed composition of human milk. Individualized fortification based on measured composition of human milk and targeting RDIs has been suggested, although not yet demonstrated to be of clinical benefit [2]. Others have trialed titrating level of supplementation with growth velocity and blood urea nitrogen [3].

A fortifier produced from human milk may be beneficial and results of early trials need be confirmed before adopted more generally [4].

At a more fundamental level, optimal rate of growth and body composition needs be determined for preterm infants. It may not be possible, let alone desirable, for very preterm infants to grow along fetal growth charts. There are some data from ex-preterm children suggesting that relative undernutrition in early life may have beneficial effects on insulin resistance [5]. Further, health outcomes may be worse if growth retardation is followed by a period of rapid catch-up growth. This was demonstrated in animal studies, when protein deficiency followed by a cafeteria diet reduced longevity significantly [6].

There is a gap in our knowledge about how best to fortify human milk for preterm infants to achieve optimal growth, development and health outcomes. Further well-designed and informed RCTs are urgently needed in this vulnerable preterm population.
References


