Abstract

Sahlgrenska Academy at University of Gothenburg
Department of Internal medicine and Clinical Nutrition

Title: "What nutrition therapy has the best outcome on growth in preterm children and/or children born with low birth weight?"

Author: Josefine Nyström and Rebecca Hammar
Supervisor: Fredrik Bertz
 Examiner: Frode Slinde
Programme: Dietician study programme, 180/240 ECTS
Type of paper: Examination paper, 15 hp
Date: April 11, 2013

Background: There is a number of reasons why a child is born preterm and with a low birth weight, for instance if the mother is underweight, smoking or exposed for malaria. The negative consequences of being born preterm or with a low birth weight are many, both on long and short term. According to the WHO preterm birth is the most common direct cause of infant mortality. By providing the right measures in time when it comes to nutrition the mortality can be reduced considerably.

Objective: To examine and summarise the scientific ground when it comes to the best nutrition therapy for preterm children and children born with a low birth weight.

Search strategy: A systematic literature search was done in the databases Pubmed, Cohrane and Scopus. The search term used was primarily infant formula, low birth weight, growth and development, breast feeding.

Selection criteria: Randomised controlled trials, low birth weight, preterm birth, intervention to compare human milk with fortified human milk or formula, outcome; weight, length and head circumference.

Data collection and analysis: Eight original articles were selected and reviewed by the SBU audit template. The strength of the evidence was assessed using the GRADE system.

Main results: Fortified human milk or formula had better effect on length growth and head circumference compared to unfortified human milk according to four studies. The evidence for this is considered to be moderately high (+++). On the other hand only two studies showed that, fortified human milk or formula gave a greater weight gain compared to unfortified human milk. The evidence for this is considered to be limited (++). Extra protein rich fortification has a significantly better effect on weight gain compared to a standard fortification and was considered to have high evidence (++++). However, the same intervention on the outcome length and head circumference was considered to have limited evidence (++).

Conclusions: There is moderately high evidence (++++) that fortified human milk or formula has a significantly greater effect on length and head circumference. There is however limited evidence (+++) that the same treatment has significantly greater effect on weight gain. There is high evidence (+++++) that protein rich fortification has a significantly better effect on weight gain, but limited evidence (++) that this intervention has a significantly greater effect on length and head circumference.