Comparision of soy-based formulas with lactose and with sucrose in the treatment of acute diarrhea in infants


Introduction
While recent data support feeding immediately after rehydration therapy for patients with diarrhea,¹-⁴ the composition of diets introduced during diarrheal episodes is controversial and has been the topic of extensive research and investigation.

Study Purpose
The purpose of this study was to evaluate the effect of feeding infants a soy protein-based formula with lactose compared with a soy protein-based formula with sucrose during an acute diarrheal episode.

Study Design
The study was designed as a randomized clinical trial of two hundred male children aged 3 to 18 months who were admitted to the hospital with acute diarrhea and signs of dehydration. Participants were randomly assigned to receive either a soy protein-based formula with lactose or sucrose after initial rehydration. Intake and output (stool, urine, and vomit) were measured and recorded every 3 hours until diarrhea resolved. 172 children successfully completed the study according to protocol. Only male children were included in order to facilitate separate collection of stool and urine.

Study Results
The stool output during the first 24 hours of maintenance therapy, the total stool output during maintenance therapy, and the stool output during the entire illness were significantly lower among patients who received the soy protein-based formula with sucrose than among patients who received the soy protein-based formula with lactose (P <0.05, P <0.001, and P < 0.001, respectively). The duration of diarrhea was significantly shorter (23 hour duration on average for the soy protein-based formula with sucrose vs. 39 hour duration on average for the soy protein-based formula with lactose; P < 0.001) among patients who received the soy protein-based formula with sucrose.

Acute watery diarrhea: 3 or more watery stools in the previous 24 hours for less than 7 days duration.
In the group receiving the soy protein-based formula with lactose, the relative risk of being withdrawn from the study increased to 1.95, and the relative risk of recurrent dehydration after feeding was initiated increased significantly to 3.49 (95% confidence interval, 1.1-9.6; \( P<0.01 \)).

Discussion

The routine elimination of lactose from the diet of infants and children during the acute stage of diarrhea has long been controversial. Data from this study indicate that when a soy-based formula is used during a diarrheal episode, the duration of diarrhea and the stool output are reduced considerably in infants given a soy-based formula with sucrose compared with infants given a soy-based formula with lactose.

Study Conclusions

Infants given a soy protein-based formula with sucrose during a diarrheal episode experienced a shorter duration of diarrhea, lower stool output, and lower failure rates compared to infants who were given a soy protein-based formula with lactose.

References


Key Finding:

A soy protein-based formula with sucrose appears to be a better choice than a soy protein-based formula with lactose for infants experiencing an acute diarrheal episode.