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Parenteral Nutrition

Revised: June 21, 2021.

Drug Levels and Effects

Summary of Use during Lactation

Several women receiving either partial or total parenteral nutrition have reportedly breastfed their infants successfully. One prominent group encourages lactation among their patients receiving parenteral nutrition if the mother wishes, with the understanding that formula supplementation may be necessary depending on the adequacy of her milk supply. Infants' growth should be monitored closely as a means of determining adequate nutrition.[1]

Intravenous amino acids used alone in postpartum mothers may hasten the onset of lactation and increase weight gain in their breastfed infants.[2]

Drug Levels

Maternal Levels. Relevant published information was not found as of the revision date.

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

A woman with chronic intestinal pseudo-obstruction was treated with home parenteral nutrition 5 days a week for 5 years at which time she became pregnant. She was maintained on parenteral nutrition during pregnancy and postpartum while she successfully breastfed her infant on the same regimen used during pregnancy.[3] Twenty months after the first delivery, the mother became pregnant again and delivered a full-term infant by cesarean section. Parenteral nutrition was increased to 7 days a week and she successfully breastfed her second infant with slight modifications in the parenteral nutrition formula.[4]

A woman was treated with home parenteral nutrition for 24 years for chronic intestinal pseudo-obstruction. She became pregnant at age 25 and continued with parenteral nutrition that was adjusted as pregnancy progressed. She delivered a preterm infant by cesarean section at 33 weeks gestation and was able to partially breastfeed her infant.[5]

A woman with maple syrup urine disease had been treated since birth with special oral formulas low in branched-chain amino acids. She became pregnant and was maintained with oral nutrition until week 37 when partial parenteral nutrition was begun to met increased metabolic demands. Following a cesarean section, the mother successfully breastfed (extent not stated) her infant for over 6 months. Infant growth at 7 months was normal and the Bayley Scales of Infant and Toddler Development Cognitive Composite Score was above average.[6]

A 26-year-old woman who was receiving long-term home parenteral nutrition due to short bowel syndrome caused by recurrent thromboembolic mesenteric infarctions. During the third trimester and postpartum, she received only home parenteral nutrition. Following a cesarean section at 37 weeks, she breastfed (extent not stated) her infant. The infant was judged as doing well at 6 months of age and thriving at 1 year of age.[7]

Effects on Lactation and Breastmilk

Several case reports exist in which a mother receiving either partial or total parenteral nutrition successfully breastfed an infant.[1,3-8]

A randomized, controlled, but unblinded study compared lactation onset and duration among women who on the first day postpartum received intravenous infusions of saline (n = 152) daily for 4 days to those who received intravenous amino acids (n = 153) for 4 days (containing isoleucine 5.6 mg, leucine 12.5 mg, lysine hydrochloride 11 mg, methionine 3.5 mg, phenylalanine 9.35 mg, threonine 6.5 mg, tryptophan 1.3 mg, valine 4.5 mg, histidine hydrochloride 8.11 mg, arginine hydrochloride 9.55 mg, alanine 6.2 mg, aspartic acid 3.8 mg, cysteine hydrochloride 1.45 mg, glutamic acid 6.5 mg, proline 3.3 mg, serine 2.2 mg, tyrosine 0.35 mg, glycine 10.7 mg, and xylitol 50.0 mg.) A greater percentage of mothers receiving amino acids achieved lactation onset on the first day postpartum than with saline (86% vs 32%). All mothers in the amino acid group achieved lactation by day 2 postpartum, compared to day 3 postpartum in the saline group. Weight gain in the infants of mothers who received amino acids was greater than thos who received saline at 2 weeks and 1 month of age. Infants in the amino acid group had better sleep than those in the saline group. A quarter of women in the amoino acid group dropped out of the study because of excessive milk production.[2]

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Substance Identification

Substance Name

Parenteral Nutrition

Drug Class

Breast Feeding

Lactation

Parenteral Nutrition