Abstract

Objective. Determine the impact of dietary risk factors on patterns of infection by heat labile toxin-producing Escherichia coli (LT-ETEC). Materials and methods. Ninety-eight infants were followed from birth for one year in Guadalajara, Mexico, beginning in August of 1986. Stool and breast milk samples were collected weekly from infants and their mothers, respectively. Mothers were also interviewed on a weekly basis regarding the health of the infants. Parametric hazard models were fit to durations of different LT-ETEC disease states determined through the analysis of stools. The child's consumption of supplemental foods and liquids as well as specific levels of LT-ETEC-specific breast milk antibodies were included in each model as time-varying covariates. Results. The hazard of LT-ETEC asymptomatic infection increased 400 percent among children who received oats gruel (hazard rate = 4.01; 95% CI 2.77-5.24). The duration of infection was reduced if the child had had a previous LT-ETEC diarrheal episode (2.12; 95% CI 1.74-2.49) but was prolonged if the child consumed herbal teas (0.53; 95% CI 0.27-0.7). Herbal teas and high LT-ETEC-specific breast milk antibody levels each reduced the hazard of symptomatic infection by ninety percent. Symptomatic episodes became asymptomatic more rapidly if a child was given rice water. Conclusions. Specific weaning foods increase the risk of infection. Breastmilk antibodies and liquid infusions reduce diarrheal disease and infection duration.

Keywords
antibodies; breast-feeding; diarrhea, infantile; Escherichia coli; hazards models; weaning; Mexico.