A rice based diet with green banana or pectin reduced diarrhoea in infants better than a rice alone diet


QUESTION: In Bangladeshi infants with persistent diarrhoea, is a rice based diet with green banana or pectin more effective than a rice alone diet in reducing diarrhoea?

Design
7 day randomised (allocation concealed†), blinded (clinicians, patients, outcome assessors, and statisticians),* controlled trial.

Setting
International Centre for Diarrhoeal Disease Research in Dhaka, Bangladesh.

Patients
62 boys who were 5 to 12 months of age (mean age 8.7 mo) with a history of loose stools (>3/d) for >14 consecutive days; absence of concurrent illness, severe infection, or severe malnutrition; no recent use of antimicrobial or antidiarhoeal agents within 7 days; and ability to take oral feed. All patients completed the study.

Intervention
Patients were allocated to a rice based banana (250 g/l of cooked, green bananas) (n=22), rice based pectin (Sigma, St. Louis, MO, USA) (4 g/kg of body weight) (n=19), or rice alone diet (n=21) for 7 days. All 3 diets were given in bottles, and children were fed freely by their mothers. The diets were flavoured with vanilla, strawberry, or lemon to prevent observer bias.

Main outcome measures
The primary outcome was recovery from diarrhoea (formed stool). Secondary outcomes were need for oral rehydration solution (ORS), need for intravenous (IV) fluid, stool frequency, vomiting, and duration of diarrhoea.

Main results
More patients who received banana or pectin had formed stools than did patients who received the rice alone diet. The difference was seen by day 3 and was sustained to the end of treatment (day 3 and 4 data are in the table). The need for IV fluids was less in the banana and pectin groups than in the rice alone group (p < 0.05). Patients who received banana or pectin also had greater reduction in stool frequency and weight, vomiting, and duration of diarrhoea than did patients who received the rice alone diet (table). The banana and pectin groups did not differ for any outcomes.

Conclusion
In Bangladeshi infants with persistent diarrhoea, a rice based diet containing green banana or pectin improved stool consistency and reduced the duration of diarrhoea more than did a rice alone diet.

RATIONALE
More patients who received banana or pectin had formed stools than did patients who received the rice alone diet (table). The need for IV fluids improved and there was no need for oral rehydration among patients who received pectin or green banana. The small trial by Rabbani et al shows that pectin based and green banana based indigestible starches are similarly effective in reducing diarrhoeal stools and duration of illness in infants with persistent diarrhoea caused by various pathogens. The efficacy of indigestible starch in acute, non-cholerla diarrhoea has not yet been studied, and persistent diarrhoea is uncommon. However, this treatment could constitute an important advance for young children with persistent diarrhoea in less developed countries in which mortality from this disorder is high. A locally prepared, inexpensive, and safe way to reduce the volume of stools is badly needed and could complement ORS as a lifesaving intervention for millions of children and adults with diarrhoea.

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