Thin layer chromatography in children with sugar intolerance in acute diarrhea

Lactose intolerance prolongs and increases the severity of diarrhea and this often leads to intolerance to other carbohydrates, including monosaccharides. The incidence of transitory sugar intolerance, occurring in acute diarrheas, can be as low as 5% to as much as 89.4%.1,2,3

Should the clinician routinely withdraw milk from the diets of children during diarrhea? This is an unresolved issue. It is inappropriate to discourage the use of milk on the basis of lactose intolerance.4 If carbohydrate intolerance could be predicted by reliable tests, discouraging the use of milk on presumed lactose intolerance, or routine dilution of milk and use of lactose-free milk, may not be necessary.5

The objectives in our study were to recognize sugar intolerance in children with diarrhea, to identify different sugars by thin-layer stool chromatography (TLC), and to study the outcome after withdrawal of milk from the diet.

One hundred and twenty children (64 male), age group 1 month to 5 years, admitted for acute gastroenteritis during the period March 2001 to December 2002 were studied. Fresh stool samples were collected on the first day of admission and assayed immediately for pH and reducing substances. Informed consent from parents was taken in all cases. Hospital ethical committee permission was taken for the study.

Ninety-one cases were classified as sugar-tolerant, i.e., stool pH >6 or reducing substances <0.5%. The stool samples of the 29 sugar-intolerant children were subjected to TLC and classified as TLC-positive if sugar was present, which was the case in 18 (62.1%) cases. Lactose was detected in all the 18 cases. Additionally, sucrose was present in 4 cases and glucose in one case. This is similar to the study by Ansari et al6 who found lactose as the offending sugar in all cases.

The incidence of sugar intolerance was greater in children on artificial milk feeds than breast feeds. Sixty of 120 children were on artificial milk feeds

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and TLC was positive in 14 of them (23%), whereas 27 children were on exclusive breast-milk feeds and TLC was positive in 2 cases (7.4%). The overall incidence of sugar intolerance in acute diarrheas was 24.2% in our study. Perianal excoriation was present in all 29 children with sugar intolerance. The mean (SD) duration of hospital stay was similar in the sugar tolerant and intolerant groups (5.7 [2.8] and days and 5.7 [2.4] days, respectively).

Milk feeds were discontinued in the TLC-positive group and continued in the TLC-negative group. The median (range) duration of diarrhea in TLC-positive cases was 3 (1-3) days versus 2 (1-4) days in the TLC-negative group (p=ns). Duration of hospital stay was 6 (4-15) days in the TLC-positive group and 5 (2-8) days in the TLC-negative group (p=ns). In the TLC-positive cases, all 18 improved after withdrawal of milk feeds.

The patients were discharged only after a successful milk challenge, when the child given a milk feed after the withdrawal did not have loose motions for 6 hours after the challenge; the child was then continued on milk. This could have contributed to the prolonged hospital stay.

Our study population was small. We also excluded sugar tolerant cases from the TLC study, and did not evaluate the effect of withdrawal of milk in these cases.

In conclusion, withdrawal of milk may not be necessary in all children with acute diarrhea classified on stool examination as sugar intolerant. Lactose has been identified by TLC in the stools in two-thirds of these cases.

Chandrika Rao, Anurag Tomar, Radhakrishna Hegde, Anand C V*
Departments of Pediatrics and *Biochemistry,
M S Ramaiah Medical College and Hospital,
Bangalore 560 054

References

Correspondence to: Dr. Rao, 11 Kesari Nilaya, H B Samaja Road, Basavanagudi, Bangalore 560 004. E-mail: docrao2000@yahoo.com

Myriad presentations of gall bladder tuberculosis

We would like to report our experience with myriad presentations of gall bladder tuberculosis.

Between 2001 and 2005 we managed five cases of gall bladder tuberculosis. All were women, aged 36-65 years (mean 53). Four patients presented with clinical features suggestive of chronic cholecystitis. One patient presented with a palpable gall bladder lump and systemic features such as weight loss and anorexia. Two patients had received antitubercular treatment for pulmonary tuberculosis 2 and 6 years prior to the current illness.

Hemogram and liver function tests were normal except for elevated ESR in all patients and hypoalbuminemia (serum albumin 2.8 g/dL; normal >3.5) in the patient presenting with gall bladder mass. Chest roentgenograms were normal in 3 patients and showed evidence of healed tuberculosis in 2 patients. Ultrasonography showed cholelithiasis and minimal wall thickening in 3 patients. One patient had diffuse thick-walled (8 mm) gall bladder with a small pericholecystic intrahepatic biloma. The fifth patient had a nodular mass in the gall bladder fundus, multiple gallstones and small pericholedochal lymph nodes. Dual-phase CT in this patient showed nodular mass arising from the fundus of gall bladder that was adherent to the duodenum, and small pericholedochal lymph nodes. There was no liver infiltration and the biliary tree and rest of the abdomen were normal. The preoperative diagnosis in four patients was chronic cholecystitis and carcinoma gall bladder in one.

Laparoscopic cholecystectomy was attempted in 4 patients. In three patients, it was successfully completed. In the fourth patient (with intrahepatic pericholecystic biloma) conversion to open procedure was required due to dense adhesions in the Calot’s triangle and cholecysto-duodenal fistula. Open cholecystectomy and repair of duodenal defect was done in this patient. Diagnostic laparoscopic evaluation of the general peritoneal cavity was normal in all four. The fifth patient underwent cholecystectomy