therapy, and when comparisons are made across clinical studies of dehydrated subjects. Emphasis on more objective signs of dehydration, such as subsequent weight gain, should be made in these settings. In addition, the teaching of physical diagnosis among medical students and housestaff should emphasize signs which are both valid and reproducible among observers.

Sir,

Weight Gain in Children with Asymptomatic Giardiasis and Iron-Deficiency Anaemia During Oral Iron Therapy

Controversies exist concerning the effects of asymptomatic Giardia lamblia infection on growth. A significant increase in weight gain has been observed in iron-deficient children after 4 weeks of oral iron therapy when compared with normal weight gain rates. We evaluated whether asymptomatic giardiasis interferes with the expected weight gain after 1 month of oral iron therapy in children with combined iron-deficiency anaemia and asymptomatic giardiasis. Patients aged 1–6 years with iron-deficiency anaemia were investigated for intestinal parasitosis by three stool examinations performed using the concentration techniques of Hoffman (sedimentation method) and Ritchie (formaldehyde-ether method). Patients with three negative stool examinations (n = 17, control group) and patients who excreted exclusively Giardia lamblia cysts (n = 18, asymptomatic giardiasis group) were enrolled in the study. Children in both groups received oral iron therapy through 2.5 mg/kg of elemental iron (ferrous sulphate) twice a day (daily dose = 5.0 mg/kg/day). Compliance with iron therapy was verified every 2 weeks and all patients consumed more than 80 per cent of the prescribed doses. No anti-Giardia drugs or dietary guidance were given during the study. Unclothed weight was recorded on days 0 and 30 of the oral iron therapy. Changes of weight were analysed using the z-score of weight for age calculated according to the National Centre for Health Statistics tables using the Anthro software program. On admission, both groups were similar concerning age, sex, nutritional status, and body iron compartments (haemoglobin, mean corpuscular volume, transferrin saturation, and ferritin). After 1 month of iron therapy, mean weight gain (mean ± standard deviation) in the giardiasis group and control group were 0.72 ± 0.13 kg and 0.53 ± 0.11 kg (P = 0.27), respectively. On day 0, the weight for age z-score (median and percentile 25 and 75) were -0.58 (-1.00/+ 0.52) and -0.42 (-1.05/+ 0.08), respectively, in the giardiasis and control groups (P = 0.74). On day 30 both groups showed a statistically significant increment of the z-score of weight for age according to the paired Wilcoxon test: +0.30 (+0.05/+0.51) in the giardiasis group and control group (P = 0.00) and +0.15 (+0.06/+0.42) in the control group (P = 0.03). The increment of haemoglobin between days 0 and 30 was 1.5 ± 0.17 g/dl in the giardiasis group and 1.78 ± 0.26 g/dl in the control group (>P = 0.00). The increase of haemoglobin was not statistically significant between the giardiasis and control groups (P = 0.03). There was no statistical correlation between the increment of haemoglobin and changes of z-score of weight for age. We conclude that in this short-period evaluation, asymptomatic giardiasis had no detrimental effect on weight gain in children with iron-deficiency anaemia after 1 month of iron therapy.

References
1. Farthing MJG, Mata L, Urrutia JJ, Kronmal RA. Natural history of Giardia infection of infants and
Sir,

**Vitamin K Deficiency Bleeding in Infancy**

Vitamin K deficiency bleeding in infancy (haemorrhagic disease of infancy) is an uncommon entity. It may mimick relatively commoner diseases like immune thrombocytopenic purpura, leukaemia, and haemophilia; therefore, the entity is likely to be missed or overlooked. In this communication 10 infants of late hemorrhagic disease of infancy detected during a 14 months period (June 1994–August 1995) are reported.

Ten infants aged 2½–11 months (mean age 6 months) were diagnosed to be suffering from vitamin K deficiency bleeding. Infants with a bleeding disorder satisfying the following criteria were included:

1. Prolonged prothrombin time (PT) and partial thromboplastin time (PIT) which normalised within 24 h of intravenous administration of 5 mg of vit K.
3. Absence of septicaemia or liver disease.

As presenting symptoms, 9 out of 10 infants had skin bleeds viz petechiae, purpura and ecchymosis. Three infants had associated subcutaneous tissue bleeding presenting as nodular purpura and one had right-sided hemiparesis. One patient presented with generalized seizure with gradually progressive pallor. Five were malnourished, none had received vitamin K at birth, and all infants were exclusively or predominantly breastfed. Two patients with CNS manifestations presented with intracranial haemorrhage. In one patient right subdural haemorrhage was revealed on cranial ultrasonography and in another CT scan delineated left fronto-parietal intracerebral bleed along with right subdural hematoma. Eight infants improved, one who was severely malnourished and anaemic expired, and one was lost to follow up.

The clinical picture of vitamin K deficiency bleeding in infancy varies from predominantly skin bleeds with nodular purpura to life-threatening intracranial haemorrhage. The disease is much more common in exclusively breastfed babies as vitamin K content is least in human milk. The associated malnutrition and diarrhoea are important predisposing factors. Through reasons largely unclear parental vitamin K given at birth is an important protective mechanism of this hemorrhagic disorder. The American Academy of Pediatrics also recommends the use of prophylactic vitamin K to all neonates. It has much more clinical relevance in developing countries like India where exclusive breastfeeding is continued for very long periods and, moreover, there is increased incidence of diarrhoea, undernutrition, and abuse of antibiotics which are important risk factors for its deficiency.

Sunil Gomber MD, DCH, MNAMS
UCMS & G.T.B. Hospital, Delhi, India

Acknowledgements

The author wishes to express his gratitude to Professor K. N. Agarwal, Head of the Department of Paediatrics of this institute for his valuable suggestions, guidance, and critical review of the manuscript.

References