

102 RELATION BETWEEN FAECAL WATER AND FAT IN PRETERM INFANTS

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Complete 24 or 72hour stool collections were performed during metabolic balances on 39 occasions in 9 preterm infants with birthweight and gestation (M±2SD) of 1081 ± 173g&28.4±2.1 weeks. between 9-90 days (33±29d). All infants were growing well and receiving food only by the oral route. Five infants were fed expressed breast milk (EBM) and 4 with a preterm formula (P.F.). Milk intake was 182±18 ml/kg/d. The weight of the wet stool (w.s.) pooled for each balance and the weight after freeze drying were recorded. The difference between freeze-dried and w.s. weight was defined as the water content of stool and expressed as % of the weight of w.s. Fat analyses were performed on the same samples using a gravimetric method and the fat content was expressed also as % of weight. The correlation between % of fat and % of water in the stool was very close considering feeds together (r=-0.95 p< 0.001) or individually (EBMr=-0.96 p< 0.001, P.F.r=-0.89 p< 0.001).

By using the regression equation of the line y=79.2-0.87x, the % of stool fat (y) can be calculated simply from a knowledge of the % water of the stool (x) to an accuracy of ± 4% (2SEM) without time consuming and expensive analyses of fat.

103 THE RELATIONSHIP BETWEEN NURSING PATTERN & BREAST MILK INTAKE IN THE FIRST YEAR OF LIFE. Inong SM, Jackson DA, Woolridge MW, Drewett RF, & Amatayakul K: Research Institute for Health Sciences, Chiang Mai, Thailand. (Introduced by JD Baum, Dept of Child Health, University of Bristol, Bristol, UK.

Cross-sectional data were collected for breast milk intake*, nursing patterns, supplementary food intake, and associated variables, over a complete 48hr period, from a randomly selected sample of 65 infants under one year of age in a rural area of Northern Thailand. For the 54 infants being given breast-feeds, time spent on the breast (Total Feed Duration - TFD) ranged from 39-371 min per 24hr. Breast milk intake was between 125-983 g/24hr, and calories from supplementary food, 0-763 kcal/24hr.

Breast milk intake showed a negative association with age, which was approximately linear (r=-0.49, p<0.01). There was considerable variation in intake at each age. After adjusting for age, breast milk intake was positively correlated with TFD (p<0.01). Babies who took supplements, spent less time at the breast, and took less milk (p<0.01 in both cases). TFD is a combined measure, being the product of the number of feeds and their mean duration. Analysed separately, feed frequency (no. per 24hr) is a stronger predictor of milk intake than mean feed duration.

These are the first data to show a clear relationship between feed patterning, supplementary food intake and breast milk intake.

(*by direct test weighing during the day, and by 'Indirect Test Weighing' at night (Woolridge et al, 1985, Paed. Res., 19, 1081, Abstr.))

104 RETINOL ESTERS IN HUMAN MILK. Haug M, Burke M, Harzer G. Milupa AG, Dept. of Research, Friedrichsdorf, W. Germany

The major fraction of the vitamin A activity in human milk occurs as fatty acid esters of retinol, although little is known about the type of fatty acids incorporated. In the present study, individual retinol esters and free retinol of human milk were analyzed by an appropriate HPLC method using fluorimetric detection. Milk samples were obtained from 8 mothers at days 3, 15 and 36 of lactation. The content of esterified retinol expressed as retinol equivalents decreased from 158 µg/100 ml at day 3 to 46 µg/100 ml at day 15 and to 50 µg/100 ml at day 36 (medians, n = 8). Differences between days 3 and 15 as well as between days 3 and 36 were statistically significant (p < 0.05). The retinol esters of palmitate, oleate, stearate and linoleate accounted for 90 % of total retinol esters and were present in almost equal proportions at all study days. Furthermore, always about 5 % of total retinol occurred in the unesterified form.

105 Vitamin losses from expressed human milk
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In cows milk the influence of factors such as temperature and light on the vitamin levels have been extensively studied (1), however in human milk this has received scanty attention. We investigated the effect of the composition of the storage container, Holder pasteurization, and conditions during tube feeding on the vitamin levels of human milk. The fat-soluble vitamins A, D and E were not affected, but the level of several water-soluble vitamins decreased. After storage at - 20°C for 3 weeks the level of vitamin C in the polypropylene container was lower than that in the glass container (29%) but the levels of the B complex vitamins were similar. Pasteurization lowered the levels of vitamins C (36%), folacin (31%), B6 (15%) and B12 (10%) (p<0.05). Tube feeding lowered the levels of vitamins C (44%) and B6 (19%) (p<0.05), adding phototherapy increased the vitamin C losses (53%). Vitamin losses in expressed human milk prior to, or during feeding may increase the incidence of vitamin deficiencies in low birth weight babies (2).

1. Webb BH et al. Fundamentals of dairy chemistry. Westport Connecticut: The Avi Publishing Company Inc, 1974.
2. Gurr M. Human and artificial milks for infant feeding. J Dairy Res 1981; 48: 519-554.

106 SURVEY OF IMMUNOGLOBULINS AND ALLERGY SYMPTOMS IN 159 ETHIOPIAN IMMIGRANTS WITH SEVERE PARASITIC INFESTATION
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159 adolescents recently arrived from Ethiopia underwent a check-up including: interrogation, physical examination, blood picture, stool analyses and immunoglobulin A,G,M and E determination. No allergy symptoms were reported in the past or recorded at physical examination. Massive parasitic infection was found in the stools and high blood eosinophils counts as well. Immunoglobulin levels were compared with values obtained in our laboratories for a group of normal, healthy, non allergic, Israeli born adolescents having no evidence of any parasitic infection.

RESULTS:	90% TOLERANCE LIMITS	
	ISRAELI BORN	ETHIOPIAN IMMIGRANTS
IgA	261 mg/ml	365 mg/ml
IgG	1708 " "	2558 " "
IgM	290 " "	518 " "
IgE	411 IU "	6383 IU "

The Ethiopian newcomers are under medical treatment and follow-up. They are at present undergoing a re-examination which includes in addition to all parameters mentioned in the first place, also skin test to common allergens and FEVI measurements. Comparing the recent results to the previous we shall be able to discuss the role of IgE levels and environmental factors in the ethiopathogenesis of allergy.

107 SPECIFICITY AND SAFETY OF THE CONJUNCTIVAL PROVOCATION TEST (CPT)
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30 children -age range 3-16 yrs (mean 8 + 3 SD)- 20 of whom Dermatophagoides pteronissinus (Dt pt) sensitive and 10 other allergens sensitive (control group), were submitted in a blind trial to CPT with Dt pt extract.
None of the patients had been hyposensitized previously, was locally treated with drugs or presented eye involvement.
After a preliminary biomicroscopic test , every 20 minutes first an 0,03% albumin solution and then a Dt pt extract at growing concentrations (1,000 - 10,000 - 100,000 BU/ml) were administered alternatively in both eyes.
10 minutes after each instillation allergen-induced eye alterations were observed. A score was given to conjunctival and pericharatic congestion, chemosis and tear secretion.
Albumin was never followed by any reaction. The Dt pt allergic patients showed, in comparison with the control group, major eye alterations even at the medium (10,000 BU/ml) Dt pt extract concentration (score 3,6 vs 0,65; P < 0,05).
Conjunctival test turns out to be safe, specific, highly sensitive and therefore useful in screening doubtful cases.