Archives of Disease in Childhood, 1977, **52**, 426–429

Paediatric Research Society

Autumn Meeting, Southampton General Hospital, 24 and 25 September 1976

Infantile acne. K. Liddell (introduced by M. Radford). Southampton.

Infantile acne, though not common, is well recognized and the lesions consist usually of comedones and papules. Superficial pustules may occasionally develop but deep pustules are very unusual and nodules and cysts are undoubtedly rare.

Three cases of infantile acne are described, 2 of which had nodules and cysts. Examination of the parents confirmed the histories that 5 of the 6 parents had had severe acne and still showed evidence of such. The mother of the child without nodules and cysts had only had moderate acne. There was a high incidence of acne in the other relatives. Another study personally undertaken suggests that moderate to severe acne is inherited as a Mendelian dominant. It may be the case that if both parents carry the genetic trait for severe acne then the child will show outstanding susceptibility to the development of acne, even as an infant. There is reference in the Italian literature by Bessone (1974) suggesting a genetic trait in infantile acne.

The age of onset of the acne varied between 1 and 8 months and the duration from 6 months to 2 years 6 months. Another interesting feature was that both children with nodules and cysts were mildly anaemic and had a leucopenia. Hellier (1954) reported a boy with infantile acne who developed severe acne as an adolescent but there are no detailed studies on the relationship between infantile acne and the predisposition to acne later in life. Personal interview of the parents of 130 adolescents with moderate to severe acne gave no history of infantile acne in any.

References

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Hellier, F. S. (1954). Acneiform eruptions in infancy. *British Journal of Dermatology*, **66**, 25–30.

Allergy and the cystic fibrosis gene. J. O. Warner, A. P. Norman, J. F. Price, J. F. Soothill, C. R. Stokes, and M. W. Turner. The Hospital for Sick Children, Great Ormond Street, and Institute of Child Health, London.

Skin tests in normal schoolchildren. R. C. Godfrey and M. Griffiths. Southampton.

The prevalence of immediate positive reactions to prick testing with house dust mite (*Dermatophagoides pteronyssinus*) and grass pollen allergens was determined in a random sample of 303 children aged between 8 and 14 years from two Southampton schools. 102 (33·7%) showed positive reactions, 50 to both *D. pteronyssinus* and grass pollen, 30 to *D. pteronyssinus* only, and 22 to pollen only. Allergic symptoms were present in 51 of the 102 children with positive skin tests. Among 30 children with *D. pteronyssinus* skin sensitivity alone, only 6 had symptoms suggesting allergic disorder. Significantly more children with positive tests than with negative tests were reported by their parents to have suffered from recurrent bronchitis during early childhood.

Prospective study of allergen avoidance in infants of allergic parents. D. J. Matthew, C. R. Stokes, M. W. Turner, J. F. Soothill, and A. P. Norman. Respiratory Unit, The Hospital for Sick Children, Great Ormond Street, London.

In a prospective study of the development of allergic disease infants of allergic parents were either subjected to an allergen avoidance regimen from birth for 6 months, or were managed conventionally. Those following the allergen avoidance regimen had a significantly lower mean serum total IgE level at 6 weeks of age and developed significantly less atopic eczema up to the age of one year.

Asthma and parasitic infestation in rural Tanzania. F. Carswell, R. H. Meakins, and P. S. E. G. Harland. Faculty of Medicine, University of Dar es Salaam, Tanzania.

Neoplastic lymphocytic surface receptors in leukaemia and lymphoma and their clinical usefulness. J. L. Smith. Southampton General Hospital.

The presence of two major lymphocytic populations in man and animals is now well documented. The surface characteristics and function of thymus dependent lymphocytes (T lymphocytes) and bursal dependent lymphocytes (B lymphocytes) enables their identification despite their morphological similarity. We currently use as part of our routine

laboratory investigation a panel of cell assays for the identification of T and B lymphocyte populations in normal and abnormal tissue. The concept of an immunological classification of lymphocytic neoplasms was described and illustrated by a study of more than 20 cases of non-Hodgkin's lymphomas.

Twenty-one cases of adult and childhood acute lymphoblastic leukaemia have been investigated. Lymphoblasts from 10 cases had no detectable surface receptors while the remainder had variable numbers of blast cells with receptors. 2 of these cases were characterized at T lymphocytic neoplasms, one presenting initially as a lymphoma and the other with CNS leukaemia in the absence of other tissue involvement. Acute lymphoblastic leukaemia appears to be a heterogeneous disease, some cases failing to express surface markers and others expressing either T or B markers or both.

Role of routine investigations in children presenting with their first febrile convulsion. N. Rutter and O. R. C. Smales. Department of Child Health, Nottingham University Medical School. Published in full in the *Archives*, 1977, **52,** 188–191.

Quality of survival after severe birth asphyxia. A. J. Thomson, M. Searle, and G. Russell. Departments of Child Health and Psychology, Aberdeen. To be published in full in the *Archives*.

New look at the neonatal electrocardiogram. D. P. Southall, D. G. Vulliamy, M. J. Davies, R. H. Anderson, E. A. Shinebourne, and A. M. Johnson. Weymouth, Dorset.

In a series of 818 newborn babies whose electrocardiograms were recorded between April 1975 and April 1976 there were 57 babies with recordings which fell outside the presently accepted normal range. Preliminary observations have identified the need to define more clearly the range of normal variation. 12 babies showed asymptomatic abnormalities of conduction and 3 of these were thought sufficiently serious to need treatment. 2 babies died suddenly, one of whom had abnormal conduction on the ECG and histologically showed abnormalities of the conducting system. This ongoing prospective study may indicate a link between conducting tissue abnormalities and the sudden infant death syndrome. 10 babies had congenital cardiac anomalies, 4 of which were first discovered because of an abnormal screening cardiogram. It is suggested that the ECG, a simple and noninvasive procedure, may be a valuable addition to the routine neonatal examination.

Dextro-transposition of the great arteries: echocardiographic observations after Mustard's operation. M. L. Rigby and E. D. Silove. Department of Cardiology, Children's Hospital, Birmingham.

Biochemical reference values in infancy and childhood. J. V. Leonard and A. J. Westlake. Institute of Child Health, 30 Guilford Street; and London School of Hygiene and Tropical Medicine, Keppel Street, London WC1.

Biochemical reference values for children between the ages of 1 month and 10 years have been calculated from data obtained in an admission profile study (Leonard *et al.*, 1975). Covariance analysis has been used to obtain estimates of the effect of variables such as age, sex, fasting, and time of day.

Nine tests were studied (calcium, phosphorus, alkaline phosphatase, total protein, albumin, magnesium, aspartate aminotransferase, cholesterol, urea) and in all, the reference values changed with age but there were no important differences between the sexes. Total protein, albumin, and phosphorus were affected by fasting and there were marked changes of phosphorus and urea levels during the day. Simple mathematical models incorporating the significant variables have been constructed which enable the results to be used clinically.

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Leonard, J. V., Clayton, B. E., and Colley, J. R. T. (1975). Use of biochemical profile in children's hospital: results of two controlled trials. *British Medical Journal*, **2,** 662–665.

Hepatic glycogen synthetase deficiency: definition of the syndrome from metabolic and enzyme studies on a 9-year-old girl. A. Aynsley-Green, D. H. Williamson, and R. Gitzelmann. Department of Paediatrics and Metabolic Research Laboratory, Oxford University, England; and Division of Metabolism, Department of Paediatrics, University of Zürich, Switzerland. To be published in full in the *Archives*.

Radiological demonstration of intrahepatic structures in biliary atresia. E. R. Howard, A. P. Mowat, and H. B. Nunnerley. Departments of Surgery, Child Health, and Radiology, King's College Hospital Medical School, London SE5.

Enterochromaffin cells and tissue concentrations of 5-hydroxytryptamine in duodenal mucosa of children with coeliac disease. D. N. Challacombe, P. D. Dawkins, P. Baker, and K. Robertson. Children's

Research Unit, Taunton and Somerset Hospital, Taunton, Somerset.

Increased urinary excretion of 5-hydroxyindoleacetic acid (5-HIAA), a metabolite of 5-hydroxytryptamine (5-HT) has been reported in children with untreated coeliac disease, and clinical recovery after introducing a gluten-free diet was accompanied by falling levels of urinary 5-HIAA (Challacombe *et al.*, 1972). Raised blood levels of 5-HT in adults with coeliac disease also return to normal after gluten withdrawal from the diet (Pimparker *et al.*, 1961). Since 5-HT is synthesized by enterochromaffin (EC) cells in the small intestine, hyperplasia and/or hyperactivity of these cells could explain raised levels of blood 5-HT and increased urinary 5-HIAA in patients with untreated coeliac disease. A cell counting technique has therefore been devised and was used to count EC cells in duodenal biopsies from 10 children with coeliac disease and from 10 controls with normal duodenal histology on light microscopy. EC cells were also counted in 4 children with coeliac disease who initially had minor histopathological changes in the duodenum and were subsequently challenged with gluten. Tissue levels of 5-HT in the duodenum were measured in 7 children and 4 adults with untreated coeliac disease and the results were compared with a group of controls. Significantly increased numbers of EC cells and increased tissue concentrations of 5-HT were found in the duodenal mucosa, from patients with coeliac disease and from children who were challenged with gluten. These findings may be related to abnormalities of 5-HT metabolism in patients with coeliac disease. As 5-HT has been shown to influence cell-cycle times in the small intestinal mucosa of experimental rats (Tutton, 1974), local release of 5-HT from EC cells in coeliac disease may be a factor in the villous flattening that occurs in this disorder.

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Hormone stimulated pancreatico-biliary secretions—do they prevent intestinal mucosal atrophy during intravenous feeding? C. A. Hughes, E. Sabin, R. Hermon Dowling (introduced by R. J. Robinson). Department of Paediatrics and Gastroenterology Unit, Guy's Hospital Medical School, London SE1 9RT.

Animals nourished exclusively by parenteral nutrition develop small bowel mucosal hypoplasia and diminished function (Feldman *et al.*, 1974). Theoretically, this could be due to the absence of food from the gut or to the resultant decrease in pancreatico-biliary secretions which are known to be trophic to the intestine (Altmann, 1971).

We studied the effect of pancreatico-biliary secretions in two groups of dogs. All were fed intravenously for 6 weeks but 6 dogs received daily infusions of cholecystokinin (CCK) and secretin to stimulate pancreatico-biliary secretions, whereas the other 5 dogs did not. We measured intestinal villous height, mucosal enzyme activity, and the absorption of leucine and galactose in both groups before and after intravenous feeding.

Without pancreatic stimulation, jejunal and ileal villous height both fell significantly, but this mucosal hypoplasia was prevented by daily CCK/secretin infusions. Jejunal galactose absorption expressed per unit length of intestine increased in the group given CCK/secretin. On the other hand intravenous feeding did not alter the specific activities of the mucosal enzymes α-glucosidase and catalase, nor leucine absorption, when expressed per unit weight of intestine, and similarly CCK/secretin infusions had no effect on these measurements. We concluded that daily CCK/secretin prevents the musosal hypoplasia which is otherwise seen in total parenteral nutrition and also enhances absorption per unit length of intestine (Feldman *et al.*, 1974).

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Pathophysiology of broken enterohepatic circulation (EHC) of bile salts in cystic fibrosis (CF). A. H. Lipson, D. P. R. Muller, and J. T. Harries. Institute of Child Health and The Hospital for Sick Children, Great Ormond Street, London WC1.

With the increasing life span of patients with CF, the clinical implications of the disturbances in bile salt metabolism in affected patients (e.g. gallstones, hyperoxaluria, and renal calculi, liver disease) are attracting increasing interest. Recent work has shown that the faecal output of bile salts in CF is grossly increased to a degree similar to that seen

in patients with ileal resections (Weber *et al.*, 1976). The EHC is broken due to defective ileal reabsorption of bile salts. It has been suggested that unhydrolysed dietary triglycerides (Tg) impair the reabsorption of bile salts in the terminal ileum, but no definitive studies have examined this hypothesis.

This investigation studied the effects of Tg on taurocholate (TC) absorption (as judged by both luminal and mucosal disappearance of TC) in the terminal ileum of the rat utilizing a well validated *in vivo* closed-loop technique. The test solutions contained triolein 10 or 30 mmol/l, TC 10 mmol/l, oleic acid 1 mmol/l, monoglyceride 0·5 mmol/l, were made isotonic (280 mOsm/l) with sodium chloride, and were buffered to *p*H 7·1 with a sodium bicarbonate buffer; the control solution was identical except for the absence of triolein. Several paired experiments were performed using different absorptive periods up to 1 hour. Absorption of TC was linear up to 20 minutes, becoming curvilinear thereafter. Triolein had no effect on luminal or mucosal disappearance of TC at any of the absorptive periods tested. These results provide evidence that unhydrolysed Tg does not impair ileal reabsorption of bile salts. Further work is in progress to define the pathophysiology of bile salt malabsorption in CF.

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Glucose stimulates fructose absorption: clinical implications in health and disease. P. J. Milla, D. P. R. Muller, and J. T. Harries. Institute of Child Health and The Hospital for Sick Children, Great Ormond Street, London WC1.

The disaccharide sucrose is composed of the two monosaccharides glucose and fructose, and the increasing dietary consumption of sucrose in the developed parts of the world has resulted in fructose becoming a major dietary constituent. Despite this there have been no systematic studies on the effects of glucose on fructose absorption. This study was prompted by our clinical impression that some infants with protracted diarrhoea absorb mixtures of glucose and fructose better than if either monosaccharide is presented alone.

The effects of glucose on fructose absorption have been investigated in the rat jejunum *in vivo*, using a steady-state perfusion technique. In addition, effects on fluid and electrolyte transport, and transmural potential difference (TPD), were simultaneously studied. Perfusion of mixtures of fructose (20 mmol/l) and glucose (2 mmol/l) resulted in a significant ($P < 0·001$) stimulation of net fructose transport, compared with values obtained when fructose was perfused alone. Higher concentrations of glucose (56 mmol/l) also stimulated fructose absorption but this was not statistically significant. The glucose-containing solutions induced large changes in TPD; when perfused alone fructose induced a small but significant increase in TPD. Perfusion of mixtures of fructose (20 mmol/l) and 3-*o*-methylglucose (2 mmol/l and 56 mmol/l) abolished the stimulation of net fructose transport. 3-*o*-methylglucose induced changes in TPD identical with glucose in equimolar concentrations. These results suggest that the stimulation of net fructose transport by glucose (2 mmol/l) may be related to cellular metabolism.

These studies indicate that glucose stimulates fructose absorption and may have important implications with regard to the dietary content of sucrose in health, and to the dietary management of diarrhoeal states in infancy.

Correction. In the April issue a review appeared on p. 340 of *The Child with Congenital Heart Disease after Surgery*. The publisher is Futura, Mt. Kisco, New York. The UK distributor is Wright, Bristol.