British Paediatric Association

Proceedings of the Forty-Third Annual Meeting

The Annual Meeting of the British Paediatric Association was held jointly with the Scottish Paediatric Society at the Aviemore Centre, Inverness-shire, from 19–22 April 1972.

Two hundred and twenty-three members and 71 wives attended.

Dr. Margaret Bell, Scottish Home and Health Department, Dr. Eileen Ring, Department of Health and Social Security, and Dr. T. K. Whitmore, Department of Education and Science, attended as Observers.

The following were guests of the Association: Sir John Brotherston, Chief Medical Officer, Scottish Home and Health Department; Dr. J. Halliday Croom, President, Royal College of Physicians, Edinburgh; Professor E. M. McGirr, President, Royal College of Physicians and Surgeons of Glasgow; Professor H. K. Visser (Rotterdam), Windemere Lecturer; Dr. J. A. MacLean, Dr. R. M. Campbell, and Mr. R. R. Stewart, Chairman, SAMO, and Secretary, respectively, of the Northern Regional Hospital Board.

Fifty-three guests of members of the Associations were present.

The Heinz Fellows for 1972, Dr. F. A. Nwako (Nigeria), Dr. T. C. Okeahialam (Tanzania), and Dr. S. 'U. Tu'itavake (Tonga), and ten UNICEF/WHO Fellows also attended.

The Annual General Meeting of the British Paediatric Association was held on Wednesday, 19 April 1972, with the President, Professor J. L. Henderson, in the Chair.

The Minutes of the last meeting, which had been published in the Archives of Disease in Childhood, were received and approved.

ELECTION OF OFFICERS. The following were elected:

- **President:** Professor J. D. Hay
- **President Elect:** Professor S. D. M. Court
- **Honorary Treasurer:** Professor Charlotte M. Anderson
- **Honorary Secretary:** Dr. B. M. Laurance
- **Honorary Assistant Secretary:** Dr. A. D. M. Jackson

MEMBERS OF COUNCIL 1972–75: Dr. D. M. Douglas, Dr. C. M. B. Field, Dr. Janet L. P. Hunter, Dr. J. D. Pickup, Dr. B. W. Powell, Dr. A. Robinson, Professor C. E. Stroud, Dr. S. D. V. Weller.

HONORARY MEMBERS: Professor J. L. Henderson, Professor H. Bickel, Miss Isabella Forshall, Professor N. O. B. Hallman, Dr. Mary Sheridan, Professor H. B. Wong.

ORDINARY MEMBERS: Dr. D. P. Addy (Liverpool), Dr. M. G. Addy (Birmingham), Dr. F. Bamford (Manchester), Dr. P. R. H. Barbor (London), Dr. J. D. Baum (London), Dr. A. W. Blair (Fife), Dr. Winifred Burgess (Devon), Dr. E. Carr-Saunders (Birmingham), Dr. Nina Carson (Belfast), Dr. D. N. Challacombe (Birmingham), Dr. T. K. Chandran (Nantwich), Dr. C. Chantler (London), Dr. A. B. Clymo (Southampton), Dr. F. Cockburn (Edinburgh), Dr. P. F. Deasy (Dublin), Dr. W. Doig (Glasgow), Dr. Cecil M. Drilliene (Dundee), Dr. Elizabeth Elliott (Derby), Dr. Rachel Evans (Lewisham), Dr. W. Fielding (Liverpool), Dr. N. E. France (London), Dr. D. Gardner-Medwin (Newcastle), Dr. J. F. T. Glasgow (Belfast), Dr. S. Godfrey (London), Dr. P. J. Graham (London), Dr. Josephine Hammond (London), Dr. J. T. Harries (London), Dr. F. Harris (Sheffield), Dr. H. J. Haggarty (Darlington), Dr. L. A. Hersov (London), Dr. D. W. Hide (Swindon), Dr. E. Joan Hiller (Nottingham), Dr. P. Husband (London), Dr. P. M. Jones (Newcastle), Dr. Patricia Morris Jones (Manchester), Dr. M. M. Liberman (London), Dr. G. McEnery (Brighton), Dr. Jillian Mann (Birmingham), Dr. B. Mason (Dundee), Dr. T. S. Matthews (Lancaster), Dr. D. H. Mollor (Aberdeen), Dr. V. Miller (Manchester), Dr. A. D. Milner (London), Dr. J. R. Moore (Sutton Coldfield), Dr. R. Nelson (Birmingham), Dr. M. Oo (Teesside), Dr. B. J. O’Sullivan (Drogheda), Dr. J. M. Parkes (Newcastle), Dr. J. Partridge (Warwick), Dr. Alison M. L. Pearson (London), Dr. D. Pickering (Oxford), Dr. H. Price (Cardiff), Dr. D. N. Raine (Birmingham), Dr. M. Reid (Lurgan), Dr. Joyce E. Richardson (Aberdeen), Dr. N. R. C. Robertson (Oxford), Dr. P. Robson (London), Dr. I. S. Ruthven (Ayr), Dr. M. L. Rutter (London), Dr. M. A. Salmon (Aylesbury), Dr. E. shinebourne (London), Dr. Margarette Smith (London), Dr. G. J. A. I. Snodgrass (London), Dr. H. Steiner (Newcastle), Dr. J. B. P. Stephenson (Glasgow), Dr. J. Stuart (Birmingham), Mr. V. A. Swain (London), Dr. M. J. Thearle (Bristol), Dr. M. Tynan (Newcastle), Dr. G. S. Udall (London), Dr. H. B. Valman (London), Dr. Corinna M. Weaver (Cardiff), Dr. J. L. Wilkinson (Eastbourne), Dr. R. B. Woodd-Walker (Wolverhampton), Dr. Grace E. Woods (Leeds), Dr. C. J. E. Wynnes (Northampton).

The Honorary Treasurer’s report and statement of accounts for 1971–72 were received and approved and the auditors reappointed for the following year.

The report of Council was received and approved and is printed below.


**1. OBITUARIES**

The Association has suffered the loss of Professor F. M. B. Allen, Past President, and Dr. R. C. Jewesbury.

—Original Members; Sir John Charles, R. Cannon.
Eley, and Sir Alan Moncrieff, Past President and
Honorary Secretary—Honorary Members; Dr. D. G.
Cottom and Dr. Anne Lloyd—Ordinary Members.

2. DISTINCTIONS
The Council has noted with great pleasure the
distinctions conferred on Professor Sir Douglas Hubble,
Honorary Member, Dr. P. R. Evans, Royal Physician-
Paediatrician—Ordinary Member, and Mr. D. J.
Waterston, C.B.E.

3. COUNCIL
Membership. The following members of the Asso-
ciation have served on Council during 1971–72: Profes-
sor J. L. Henderson (President), Professor Charlotte M.
Anderson (Honorary Treasurer), Dr. M. W. Arthurton,
Dr. B. D. Bower, Dr. E. N. Coleman, Dr. R. D. G.
Creery, Dr. R. H. Dobbs (Past President), Dr. W.
Dickson, Professor S. Dundon, Dr. H. V. L. Finlay,
Dr. Muriel Frazer, Professor O. P. Gray, Professor
J. D. Hay (President Elect), Dr. W. Henderson (Hon-
orary Assistant Secretary), Dr. A. D. M. Jackson (Hon-
orary Assistant Secretary), Dr. B. M. Laurance (Hon-
orary Secretary), Dr. J. W. Platt, Professor L. B. Strang,
Dr. D. A. J. Williamson; Professor S. D. M. Court,
Chairman of the Academic Board (ex officio); Professor
A. W. Wilkinson, President of BAPS (ex officio). Pro-
fessor T. E. Oppe, Adviser in Child Health to the
Department of Health and Social Security, and Dr.
F. S. W. Brimblecombe, Central Health Services
Council, have attended.

Observers. The Association is grateful for the
assistance given to it by Dr. Margaret Bell, Scottish
Home and Health Department; Dr. Mary Jenkins,
Welsh Office; Dr. Eileen Ring, Department of Health
and Social Security; and Dr. T. K. Whitmore, Depart-
ment of Education and Science, who have attended
meetings of Council and advised in many ways.

Meetings. Council met on four occasions: 12 June

4. MATTERS CONCERNING THE ADMINISTRATION OF THE
ASSOCIATION
Constitution of the Association. The reorganiza-
tion of Council and the appointment of Working Parties
to formulate policy and to liaise with other bodies, approved
by the Annual Meeting last year, has proceeded.
Proposals to speed regional representation on Council
will be presented at the Annual General Meeting.

The Future of the BPA. The growing Membership
raises problems about the future of the Association
which Council will present for discussion.

Academic Board. Council nominated Drs. J. P.
Bound, S. R. Meadow, and R. J. Robinson to fill the
vacancies on the Board resulting from the retirement
of Professor S. D. M. Court, Dr. V. Dubowitz, and
Dr. B. M. Laurance.

5. AWARDS OF THE ASSOCIATION
James Spence Medal. Council approved the nomi-
nation of Dr. R. C. Mac Keith in recognition of his 'out-
standing contributions to the advancement of paediatric
knowledge'.

Donald Paterson Prize Essay. Council has approved
the Adjudicating Panel's decision that the prize should be
awarded to Dr. P. M. Jones for his essay ‘Growing up
with Haemophilia’.

Heinz Fellowships of the BPA. Heinz Fellowships
for 1972–73 have been awarded to Dr. T. C. Okeahialam
(Tanzania), Dr. F. A. Nwako (Nigeria)—Fellowship A;
Dr. A. M. Berry (India) and Dr. S. ‘U. Tu’itavake
(Tonga)—Fellowship B. Council is grateful to H. J.
Heinz Company for continued support of what it
believes is an important contribution to international
paediatric education, and to the Nuffield Foundation for
continued administrative help.

Finance and Allied Matters. The Association is
grateful to the Institute of Child Health for continuing
to provide office accommodation and committee facilities
at 30 Guilford Street, and to The Hospital for Sick
Children for catering services.

The Grant from the Children’s Research Fund for
the Academic Board has continued and the Directors of
Unigate Ltd. have maintained their annual travel grant.
A generous donation of £100 was received from Mr.
Hugh Greenwood—(Honorary Member).

Meetings of the Association. The 42nd Annual
Meeting of the Association was held at Scarborough in
April 1971.

A joint meeting with the British Association of
Paediatric Surgeons was held in Aberdeen in September,
1971. The President and 52 members and guests of the
BPA attended.

Council wishes to record its appreciation of the work
of the Academic Board in organizing the scientific
programme of these meetings, and to thank the many
members who submitted and presented papers.

The 44th Annual Meeting of the Association will be
held from 3–7 April, 1973 at Lancaster University.

6. STANDING COMMITTEES OF THE ASSOCIATION
BPA/BAPS Liaison Committee. This new com-
mittee is to concern itself with matters of mutual interest,
replacing the Accidents, Hospitals, and Nursing Com-
mittees. The following are currently being considered:
battered babies, cot deaths, children’s nursing (written
and oral evidence presented to the Asa Briggs Com-
mittee), ‘The Desirable Size of Major Children’s
Centres Serving Large Regions or Conurbations’ (sent
to the Department of Health).

Overseas Committee. A booklet of information for
paediatricians wishing to work overseas has been
published entitled ‘Help for Child Health Overseas’.
The appendices of the ‘Blue Book’ giving advice for
paediatricians from abroad have also been revised and
published.

European Standing Committee. A standing com-
mittee to study the implication for British paediatrics
of entry into the Common Market has been established.

7. AD HOC COMMITTEES AND WORKING PARTIES
Course in Neonatal Special Care Nursing. After
approval by Council, a memorandum has been sub-

British Paediatric Association
mitted to the Joint Board of Clinical Nursing Studies for consideration by the Special Care Baby Panel.

**Paediatric Nomenclature.** Work is continuing in consultation with WHO and the Registrar General in producing a neonatal section of the International Classification of Disease.

**Joint Working Party with Society of Medical Officers of Health.** In view of several common problems, a Working Party has recently been established to replace the previous subcommittee. Among matters to be discussed are the problems of children living with handicap, and the training of local authority doctors in hospital paediatric problems.

**Poisoning in Childhood.** The Working Party continues to examine aspects of prevention with the Department of Health.

**Married Women Doctors.** Recommendations about their role in paediatrics are being prepared.

**Abortion Act.** Evidence is being prepared for submission to the Lane Committee on the Working of the Abortion Act.

**MRCP Examination.** Officers of the Association have met the Presidents of the three Royal Colleges to discuss the proportion of paediatrics in the Membership examination (see also Report of the Academic Board).

**Neonatal Lethidrone.** Council’s advice about the use of Neonatal Lethidrone was sought by, and submitted to, the Council of the Central Midwives Board.

8. Council is grateful to the members who have served on Committees and Working Parties during the year, and also to those who have represented the Association on both statutory and voluntary bodies. Many individual members have helped the Association by their advice, suggestions, and criticisms.

9. **Matters Concerning Government Departments
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**Department of Health and Social Security.** The report on Mental Handicap was warmly welcomed by the Department and has been distributed to all Medical Officers of Health.

During the year the Association has presented written evidence and made formal or informal comments upon reports from the Department. These include:

(i) The NHS Consultative Document.
(ii) The Future of the School Health Services.
(iii) Handicapped School Leavers.
(iv) The integration of ENT and Ophthalmological paediatric patients in children’s departments.
(v) Cancer in children.

Council is most grateful for the continuing advice and support of Dr. Eileen Ring, Dr. Margaret Bell, and Dr. Mary Jenkins, Observers from the Department of Health and Social Security, the Scottish Home and Health Department, and the Welsh Office, respectively.

**Department of Education and Science.** Council has submitted opinions on several matters and is grateful to Dr. T. Kingsley Whitmore for continuing support and advice.

The Annual Meeting discussed a memorandum from Council on the future of the British Paediatric Association. It was approved that Council would consider nominations of Medical Assistants for Ordinary Membership of the Association.

**Scientific sessions**

Scientific sessions were held on Thursday and Friday, 20 and 21 April, and the following communications were presented.

C. H. M. Walker, P. A. Tabb, J. Inglis, and D. C. L. Savage. Dundee. ‘Controlled trial of phototherapy of limited duration in the treatment of physiological hyperbilirubinaemia in low birthweight infants.’ The main reasons for caution in the use of phototherapy for treatment of neonatal hyperbilirubinaemia are the uncertain metabolic effects of intense light in infants, and the effects on growth and on the retina in experimental animals. On the other hand, the value of light in reducing the level of indirect bilirubin is well established and it has been suggested that its use reduces the need for exchange transfusion and perhaps limits the cerebral injury reported as occurring occasionally at serum levels at or below 15 mg/100 ml. The purpose of this study was, therefore, to determine the value of a strictly limited period of phototherapy.

Seventy-eight infants below 2500 g at birth were divided by random selection into (1) a control group, (2) a group given 12 hours, and (3) a group given 24 hours phototherapy. Treatment in groups (2) and (3) began when the indirect bilirubin reached 10 mg/100 ml. The following conclusions were reached.

(i) Therapy for 12 hours was sufficient in about 80% of infants. The remainder required further treatment on reaching levels about 13 mg/100 ml.

(ii) Infants whose indirect bilirubin reached 10 mg/100 ml at less than 72 hours of age required further therapy more often than those whose bilirubin reached this level after 72 hours of age (22–30% as compared to 8–14%).

(iii) 42% of the control cases who were not treated at 10 mg/100 ml later required phototherapy. One exchange transfusion was given during the study and a review of the numbers required during the period 1967–1971 confirms the value of phototherapy in reducing the need for this procedure.

(iv) There was no difference in the effect of therapy between those infants who were pre-term and those who were small-for-dates.

(v) The effects of phototherapy did not appear to be related to calorie or fluid intake.
(vi) There is no need for long-term therapy or total
room exposure.
(vii) A watch must be kept for later anaemia.
(viii) The light in no way imposed a strain on the
nursing staff.


E. N. Hsy introduced by G. A. Neligan. Newcastle. 'Hypoglycaemia in haemolytic disease of the newborn.' The incidence and time course of the hyperinsulinism and hypoglycaemia that accompanies severe haemolytic disease of the newborn has been studied in a consecutive series of 91 babies who presented with haemolytic disease severe enough to require exchange transfusion. *Transitory* asymptomatic hypoglycaemia (<20 mg/100 ml) occurred for a period of 3 hours or less in 5 babies between 2 and 5 hours after exchange transfusion in association with a prolonged insulin response to the use of ACD blood. *Prolonged* (though apparently asymptomatic) hypoglycaemia for more than 3 hours occurred in the first 12 hours of life in 12 of the 20 babies who either had an intrauterine transfusion or had anaemia at birth (Hb < 11 g/100 ml). 9 of these babies were already hypoglycaemic before exchange transfusion 2 hours after birth; all had high insulin levels at birth but normal levels by the age of 24 hours. All the 6 hydroptic babies had prolonged hypoglycaemia. 4 babies were shown to have had raised ascitic fluid insulin levels 2 weeks or more before delivery. It is concluded that babies with severe haemolytic disease should receive intravenous glucose prophylactically for at least 24 hours after exchange transfusion at birth.

L. Stimmmer, G. J. A. I. Snodgrass, and Eileen Jaffe. London. 'Dental defects associated with neonatal symptomatic hypocalcaemia.' To be published in full in the *Archives.*


J. T. Harris. London. 'Effects of different bile salts on the absorption of fluid and electrolytes in the jejunum.' (To be published.)

H. B. Valman. London. 'Long-term prognosis after resection of the ileum in childhood.' Twelve children who have survived resection of more than 45 cm of ileum (8 during the newborn period, and 4 later in childhood) have been re-assessed after periods between 1 and 14 years. At follow-up only 2 children have any restriction of dietary fat; none have any gastrointestinal symptoms but the older children still have steatorrhoea (21-26 g faecal fat/day). Radiological evidence of rickets was not found in any patient.

Impaired absorption of vitamin B12 has been shown by a whole body counter technique in 7 of 10 children; and in one of these overt vitamin B12 deficiency occurred at puberty.

The height and weight centiles for individual children are similar. In 2 children growth in height is retarded compared with that expected from measurements of their parents and sibs. Only one child is below the 3rd centile for height, and in this patient the primary condition (abdominal tuberculosis) may contribute to the growth failure.

Despite long periods of malnutrition in early infancy 6 of the 8 children who had resection in the newborn period have normal intelligence as assessed by the 'draw-a-man' method.

Mary A. Rossiter introduced by B. A. Wharton. London. 'Metabolic responses to a milk feed in children with coeliac disease.' A few children with coeliac disease continue to present management problems for a week or so after starting a gluten-free diet. We have therefore studied the metabolic effects of a normal milk feed on 8 children (aged 7 months to 13 years) with coeliac disease.

In contrast with observations on children with normal jejunal morphology, the milk feed given to coeliac children resulted in a *fall* in blood glucose and an *exaggerated* rise in plasma amino acids; the rise in plasma immunoreactive insulin after milk was similar in the 2 groups of children. After lactose alone, blood glucose rose only a little less in the coeliac children than in the controls.

In jejunal mucosal specimens from the coeliac children disaccharidase levels and active transport of glucose were more reduced than dipeptidase activity and leucine and glycine transport.

The biopsy studies suggest that there may be differential malabsorption of sugar and protein. The metabolic changes occurring when milk is given to children with coeliac disease are probably related to the known interaction of amino acids and sugars during absorption and to their combined effects on the endocrine system.

C. T. Kappagoda, J. B. Stoker, and R. J. Linden introduced by Olive Scott. Leeds. 'A new method for the assessment of acute acid-base disorders.' Current methods of assessing acute acid-base disturbances have depended on the use of the Henderson-Hasselbach equation (Singer-Hastings nomogram) or on data derived from the titration of blood *in vitro* (Siggaard-Anderson nomogram). These methods are misleading when used to assess acute acid-base disorders of the whole body.

As a consequence, Kappagoda, Linden, and Snow (1970) and Stoker et al. (1972) described a more practical approach to the assessment of acute acid-base disorders based on *in vitro* CO₂ titration curves. They showed in both dog and man that the slope of the *in vitro* CO₂ titration curve increased with an increase in the nonrespiratory acidaemia. The 'nonrespiratory pH' was introduced as an index of the nonrespiratory acidaemia and was defined as the pH that would occur if the PCO₂ of the whole body were adjusted to 40 mmHg. In practice, the 'nonrespiratory pH' was predicted from the *in vitro* CO₂ titration curves.
This scheme has the advantage of using two readily measured parameters (pH, PCO₂) and does not resort to the use of expressions, such as 'standard bicarbonate', which have little relevance to the whole body. It also deliberately avoids predicting the degree of depletion of the 'stores' of buffers because it is clearly impossible to convert concentrations in blood such as base-deficit to absolute amounts in the whole body. Such predictions would be valid only in situations where the amounts of buffer 'stores' present initially and the duration of the underlying disorders are known. In the absence of such information, the correction of non-respiratory acid-base disorders must depend on the administration of bicarbonate and subsequent reassessment. This approach to the problems of acid-base balance has now been used in infants and children and found to be both valid and very much simpler to understand.

REFERENCES

C. E. Dent and T. C. B. Stamp. London. 'Treatment of hypophosphataemic rickets due to sex-linked dominant gene.' A follow-up study averaging 15 years (range 9-18 years) will be described of 9 children with this disease. Many came with previous follow-up data from other hospitals to add to ours. The best treatment seems to be with vitamin D only, in doses of about 1-1.5 mg (40,000-60,000 IU) of calciferol (vitamin D₃, ergocalciferol). The dose should be just insufficient to heal the radiological signs of rickets and insufficient also to lower the phosphatase to normal. It is essential to make the diagnosis and begin treatment as soon as possible as catch-up growth is insignificant and all untreated patients become progressively dwarfed during their first few years of life. With adequate early treatment, osteotomy is not necessary and the patient ends his growth period as a well formed adult, a little short in stature owing to relative shortness of legs. Other treatments tried but not recommended have been oral calcium, oral phosphate, human growth hormone, and a small dose of corticosteroid. The other vitamin D compounds, vitamin D₂ (cholecalciferol), dihydrotachysterol (DHT) are similar in action to ordinary calciferol, but the maintenance dosage of DHT is about half that of the other compounds. A variant of the treatment using 0.25 mg/day of calciferol, with extra oral calcium salts, is under trial and looks promising. We stress the dangers of vitamin D intoxication, especially when doses of more than 2 mg of calciferol daily are given. We are also worried by the apparent variability in potency of some standard preparations, and by the fact that most high dosage preparations of calciferol are only available in tablets of 1.25 mg (50,000 IU) size, this making smaller dosage adjustments difficult.

C. A. Porter introduced by A. P. Mowat. London, 'Neonatal hepatitis and α-1-antitrypsin deficiency.' (To be published.)
D. C. L. Savage. Dundee. 'Excretion of individual 17-OH-steroids and corticosteroids in the urine of children with small stature.' (To be published.)
R. J. West introduced by June K. Lloyd. London. R. J. West and June K. Lloyd. 'Use of cholestyramine in treatment of children with familial hypercholesterolaemia.' To be published in full in the Archives.
A. Moso introduced by V. Dubowitz. Sheffield. 'Nerve conduction and electromyography in paediatric practice.'

Motor nerve conduction velocity increases with myelination of the peripheral nerve, and is thus a useful parameter in assessment of gestational age of the newborn infant. We have also done a prospective study of postnatal maturation (up to one year) of preterm, term, and small-for-dates infants.

Retarded myelination, as in hypothyroidism, will be reflected in slowed nerve conduction velocity. Diseases causing demyelination of peripheral nerves, whether genetically determined, such as leucoerythromatosis, or acquired, such as infectious polyneuritis, also produce slowing of the conduction velocity, which is thus a valuable diagnostic tool.

Electromyography has proved valuable in diagnosis of neuromuscular disorders, even in early infancy. Lesions of the anterior horn cell (spinal muscular atrophy), which produce high amplitude, long duration polyphasic potentials, can be distinguished from myopathies such as muscular dystrophy, producing low amplitude, short duration, polyphasic potentials. EMG has been particularly useful in the differential diagnosis of floppy infants. It has helped to diagnose dystrophia myotonica in early infancy and also proved useful in assessment of prognosis of peripheral nerve lesions.

Our recently developed technique for automatic quantitation of the EMG signal will unequivocally distinguish an abnormal from a normal response, and has proved useful in carrier detection in X-linked Duchenne dystrophy.

J. K. Brown. Edinburgh. 'Pattern of acute neurological disorder and subsequent outcome in severe neonatal asphyxia.' (To be published.)
D. H. Mellor. Aberdeen. 'EEG findings and behaviour in children with a history of epilepsy.' A study designed to look into the complex relations existing between epilepsy and behaviour disorders in schoolchildren under the age of 13 years was started in 1969. For inclusion a child had in the past to have been diagnosed clinically as having epilepsy and to have had an EEG performed. Also the child had to be attending a local authority school in the North-East region of Scotland at the beginning of the study. Standardized behaviour questionnaires were sent out to the teachers and parents of these children and scored on return. The questionnaires had been validated.
previously by Dr. Michael Rutter on a general population sample of Aberdeen schoolchildren and a group of children attending the psychiatric clinic at the Maudsley Hospital. The EEG recordings of 237 of these children were analyzed blindly with regard to the type, amount, lateralization, and area of any abnormal activity present. An attempt was then made to relate these EEG findings to the scores on the behaviour questionnaires completed by the parents and teachers. No significant relations were found between the scores and the amount or area of abnormal activity. With regard to the types of abnormal EEG activity, children with records judged 'positive for epilepsy' and those showing spikes showed significantly higher hyperactivity scores on the parents' questionnaires. Children whose abnormal EEG activity was bilateral and equal had significantly lower neurotic scores on the teachers' questionnaires than the remainder. A positive correlation was found between abnormal EEG activity ipsilateral to the preferred hand and the parents' hyperactivity score.

JOSEPHINE HAMMOND. London. 'Prognosis of severe cyclical vomiting.' A follow-up study has been undertaken of 12 children admitted to hospital between 1955 and 1965 with severe recurrent vomiting. Age at follow-up was 17–27 years; the patients were visited in their homes and were questioned regarding persistence or recurrence of gastrointestinal symptoms and development of migraine. Psychological difficulties were assessed by questionnaire. A control group matched for age and sex was included.

In the experimental group 8 had developed migraine and in 5 of these episodes of vomiting had persisted; 3 still had episodes of vomiting without migraine; 8 showed a psychological disturbance. Only 2 were symptom-free. In the control group, 1 had developed migraine, 2 had recurrent episodes of vomiting, and 3 showed a psychological disorder. 6 were symptom-free.

In the experimental group symptoms tended to be multiple and of greater severity than in the control group. Because of the severity of the attacks of 'cyclical vomiting', many investigations had initially been carried out to rule out organic disease. In none of the 12 patients had an organic condition come to light during the ensuing years.

It is concluded that cyclical vomiting may occasionally present as a severe and even life-threatening condition in childhood and that many of these patients develop migraine and psychological disorders in adolescence and adult life.

D. R. JONES introduced by W. Davies. Glamorgan. 'Childhood infections with opportunistic mycobacteria.' Now that infections due to mycobacterium tuberculosis have declined, those due to the opportunist mycobacteria are more frequently recognized, particularly of the cervical lymph glands, but less commonly as pulmonary or disseminated infections.

A 16-month-old child developed cutaneous, pulmonary, and bony lesions both clinically and radiologically. Because of a Mantoux reaction of 7 mm diameter, conventional antituberculous therapy was given. 4 weeks later, culture from a cutaneous lesion grew Mycobacterium kansasii. Differential skin testing resulted in a larger reaction to PPD-Y (kansasii) than to PPD-S (tuberculosis).

Because the infection was considered to be due to Myco. kansasii treatment was changed to streptomycin, INAH, ethionamide, and rifampicin. After 20 months on the last 3 drugs the child is well with almost complete radiological resolution of the pulmonary and bony lesions.

A 'positive' Mantoux reaction as evidence of past or present mycobacterium tuberculosis infection should not be accepted until skin tests with the PPD solutions derived from the various opportunist mycobacteria have been done.

Although the PPD or Mantoux solutions are not antigenically specific and a Mantoux or a PPD-S skin test will be positive in most patients infected with the various mycobacteria, different skin testing will result in a skin reaction at least 3 mm larger to the PPD solution derived from the actual infecting organism, than to the PPD-S skin reaction. Such testing enables more appropriate treatment to be given.

D. H. GARROW and G. J. Kane. Amersham. 'Toxocariasis.' An investigation into the frequency and clinical significance of toxocariasis in a number of children and adults was presented. Infection is more widespread and eosinophilia less common than is generally supposed. Toxocariasis may be a common cause of epilepsy, asthma, recurrent abdominal pains, 'growing pains', and Henoch-Schönlein purpura.

The fluorescent antibody test (Kane, Matossian, and Batty, 1971) was used to measure toxocara specific immunoglobulins. Estimations for specific IgG and IgM antibody were carried out on 144 children and 51 adults by one of us (G.J.K.) without knowledge of the clinical details. The antigen used was a sonicate of Toxocara canis second stage larvae. Fluorescence at a serum dilution of 1 : 50 or higher was regarded by us as significant.

The series includes a number of classical manifestations of toxocariasis: a granuloma in an eye, granuloma in the neck, the eosinophilia-hepateomegaly syndrome, prolonged jaundice with granuloma in the liver, various skin rashes, polyarthritis, epididymitis, and very prolonged pyrexia.

Three clinical groups showed an increased incidence of significant titles as compared with controls (see Table).

There were 21 cases (17 children and 4 adults) who presented with both recurrent abdominal and limb.

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<th>Group</th>
<th>Total no.</th>
<th>Total no.</th>
<th>Significant titles</th>
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<tr>
<td></td>
<td></td>
<td>IgG (%)</td>
<td>IgM (%)</td>
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<tr>
<td>Controls</td>
<td>64</td>
<td>16 (25)</td>
<td>4 (6)</td>
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<tr>
<td>Idiopathic epilepsy</td>
<td>32</td>
<td>18 (56)</td>
<td>13 (40)</td>
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<tr>
<td>Asthma</td>
<td>19</td>
<td>11 (58)</td>
<td>5 (26)</td>
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<tr>
<td>Recurrent pains in abdomen</td>
<td>64</td>
<td>35 (55)</td>
<td>24 (38)</td>
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pains. 15 (71%), including 3 cases of Henoch-Schönlein purpura, showed a significant titre of IgG antibody and 11 (52%) an increase in IgM antibody.

Treatment with diethylcarbamazine was followed in a number of cases by striking clinical improvement accompanied by a fall in specific IgM antibody.

REFERENCE


M. Taylor introduced by M. C. Joseph. London. ‘Fallot’s tetralogy: the functional effect of total surgical correction.’ (To be published.)

E. N. Coleman. Glasgow. ‘The effect of elective cardiac surgery on physical activity and growth.’ (To be published.)


S. Godfrey. London. ‘Exercise-induced asthma in children.’ Exercise is a very potent cause of bronchoconstriction in asthmatic patients, especially children (Jones, Buxton, and Wharton, 1962) but it is probably acting as a trigger mechanism, and exercise-induced asthma is not an entity in its own right. Studies have been carried out with different types of exercise including free range running, treadmill running, arm cranking, cycling, and swimming. Each patient worked at the same rate for each type of exercise. Very marked differences in the resulting bronchoconstriction were observed, with free range running being the most potent stimulus and swimming being the least (Anderson, Connolly, and Godfrey, 1971). The nature of the exercise stimulus will be discussed. Other studies on the duration and severity of exercise have been used to define the optimum type of exercise test for clinical and physiological studies. Studies in adults with arterial cannulae have shown the blood gas changes which occur during exercise and with the bronchoconstriction which follows; and studies of lung mechanics in both adults and children have been made using a whole body plethysmograph. Exercise tests are now being used for the assessment of the severity of the asthma and the response to treatment with various drugs, particularly disodium cromoglycate.

REFERENCES


Gillian Day introduced by Margaret Mearns. London. Gillian Day and Margaret B. Mearns. ‘Bronchial lability in cystic fibrosis.’ To be published in full in the *Archives.*

J. M. Parkin. Newcastle. ‘A longitudinal study of village children in Uganda.’ Under-nutrition is one of the major medical problems of the world. Attempts to prevent it are limited by uncertainty of the relative importance of the possible primary causes—shortage of food, poor quality of food, infections, infestations, and social and emotional problems. In this paper a longitudinal study of village children is described, which is aimed at answering this question for one area of Uganda. Anthropometric, dietary, biochemical, and clinical details were collected every month over a period of up to 3 years from 40 children. These unique data are analysed to show the pattern of growth and changes in serum albumin in relation to dietary intake. They indicate that the major dietary deficiency of the children is of calories and is greatest from the age of 18 to 30 months. Infections, which are extremely common, are probably an important reason for this by reducing appetite. Adaptation to the dietary intake during the first year is by a slow growth rate but reduced activity is the major adaptive mechanism during the second and third years. Cessation of growth at this stage indicates a precarious balance from which the child may be precipitated into uncompensated malnutrition by any further stress.

P. N. Swift. Farnborough. ‘The organization of inpatient care in an up-country hospital (Mbale, Uganda).’ In a 48-bed children’s ward, treating around 500 new inpatients per month, the death rate fell from 13% to 8% and the overall failure rate from 21% to 10% in 2 years.

This improvement could not be attributed to admission of milder cases, better technical facilities, additional general medical staff, or reduction of overcrowding. Of greater importance are considered to have been comprehensive diagnostic assessment, adoption of standard routines of management, and adequate supervision, and, especially with regard to gastroenteritis, the introduction of an outpatient/admission resuscitation unit. The data concerning measles indicate that cross-infection in hospital may adversely affect the failure and death rates of this disease. Anaemia is found to be a more serious concomitant of many diseases than is generally appreciated, being present in 31% of all deaths compared with 24% in diseases associated with protein-calorie malnutrition.

Medical records, accurate data, and regular feedback of statistical results are indispensable for the efficient running of an up-country paediatric unit, and are practicable without significant expense.

D. C. Morley. London. ‘Birth interval, maternal care, and child health.’ In unsophisticated societies family size is clearly related to birth interval. In the village of Imesi, Nigeria, there are powerful taboos against sexual intercourse during breast feeding and the median birth interval is therefore long, namely 34 months. In a South American society where no such taboos exist, the median birth interval is much shorter, namely 17 months.

Birth interval is of concern to parents in all societies.
An examination of the distribution of birth interval in Imesi has been undertaken and indicates that for 5% of mothers it is reduced to 27 months and therefore for this proportion of mothers conception will occur when their last child is 18 months.

In discussion with the mother it may be more helpful to concentrate on the concept of birth interval rather than a desirable family size.

A simple weight chart that is now widely used in developing countries has been altered so that the nurse or doctor seeing the child will be encouraged to record the result of a dialogue in which the mother is advised how she may maintain or extend birth interval. This advice and help will be concentrated in the months before conception is likely to occur, at a time when the mother may be under pressure to resume intercourse.

Few recent studies of birth interval have been made. Such studies as exist suggest that a short birth interval both in Western and developing countries may be associated with a higher morbidity, poorer physical growth, and higher mortality.

A Seminar on ‘Fetal Well-being in Utero’ was held on Saturday morning, 22 April, with Professor J. A. Davis as Chairman. The following speakers took part: Professor H. Stern. London. ‘Monitoring of virus infections during pregnancy’; Dr. S. Campbell. London. ‘Monitoring of fetal growth’; Professor P. J. Keller. Zurich. ‘Endocrine parameters of fetal well-being’; Dr. T. Wheeler. London. ‘Care of the fetus during labour.’ (Abstracts published below.)

WINDERMERE LECTURE. The Lecture was delivered on 20 April by Professor H. K. A. Visser. Rotterdam. ‘Some physiological and clinical aspects of puberty.’ To be published in full in the Archives.

Members and guests attended a Reception on the evening of Friday, 21 April, by invitation of the Northern Regional Hospital Board.

The Ulster Cup competition was held at the Boat-of-Garten Golf Club on Friday, 21 April, and was won by Professor G. C. Arneil. The UCH Squash Cup competition was held at Inverness and won by Dr. Y. K. Wong.

The Annual Dinner of the British Paediatric Association was held on the evening of Friday, 21 April.

Abstracts from Seminar on ‘Fetal Well-being in Utero’


Viruses which can harm the fetus, by direct infection or by indirect means, include influenza, mumps, measles, variola, vaccinia, varicella, serum hepatitis, and the enteroviruses. These are not commonly encountered in pregnancy, and fetal involvement is followed either by death or complete recovery. They are probably not teratogenic and survival with severe residual damage is unusual. To monitor routinely for such infections during pregnancy, in the absence of specific antiviral therapy, is therefore not really worth while.

Neonatal herpes is also rare, and is usually fatal, but some cases survive with severe brain damage. Infection occurs during passage through the birth canal and this can be prevented by delivery by caesarean section. The risk to the fetus is greatest with primary herpes of the genital tract, which can be recognized by careful clinical examination during the final weeks before term.

Rubella virus and cytomegalovirus are the only known viruses which undoubtedly cause congenital abnormalities in man. Fetal infection is common after maternal primary infection and most infants survive with their congenital abnormalities. Fetal damage with rubella virus occurs almost exclusively in the first trimester, and the rash, in the pregnant woman or in her contact, is an early warning signal; confirmation of infection can be made by means of the HI and IgM antibody tests. In the absence of a rash, both in the pregnant woman and her contact, the danger to the fetus can be recognized only by a scheme of routine monitoring or IgM antibody at the first antenatal visit (usually during the second month), followed, in patients without any antibody, by an HI antibody test at 14 to 16 weeks.

Cytomegalovirus is a more important cause of congenital abnormalities than rubella virus, causing particularly mental retardation. 1 to 2% of pregnant women undergo primary cytomegalovirus infection during pregnancy, and 1/4 to 1/3 of babies are born excreting the virus. Probably about 10% of congenitally infected infants become mentally retarded, and brain damage is more likely to occur after maternal infection during the first half of pregnancy. Since primary cytomegalovirus infection in adults is almost invariably subclinical, detection of infection during early pregnancy would require routine monitoring of all women for specific IgM antibody, at the first antenatal visit, followed in those women without any antibody by a further test for the development of CF antibody at 14 to 16 weeks. Such tests might be particularly useful in very young, unmarried girls who become pregnant, since they produce an unusually high proportion of all infants born with congenital cytomegalovirus infection.


Impaired fetal growth is usually caused by inadequate growth support from the placenta. Occasionally it occurs when the fetus has a reduced growth potential, a condition often associated with fetal abnormality. Fetal growth retardation results in a small-for-dates fetus which is best defined as being less than the 5th centile of weight for gestation. The small-for-dates fetus has more than 8 times the perinatal mortality rate of the normal weight fetus.

Serial measurement of the fetus to assess the growth rate is the most direct way of determining the nutritional function of the placenta. There are only two methods of measuring fetal growth, abdominal palpation and ultrasonic cephalometry. Abdominal palpation has
been shown in several recent papers to be inaccurate and at the present time only 30% of small-for-dates fetuses are detected antenatally by this method at Queen Charlotte's Hospital.

Ultrasound cephalometry can be performed from 13 weeks onwards. It involves sending high frequency sound waves through the maternal abdomen. By detecting the returning echoes, the fetal head can be outlined on a two dimensional display (B scan) and then measured on a unidimensional display (A scan). Highly accurate measurements are obtained. Measurements before 30 weeks are useful in assessing fetal maturity as fetal growth is rapid during the second trimester and growth rates uniform. Measurements after this are more useful in showing the growth rate of the fetus. During normal pregnancy there is a fall in fetal growth rate after 38 weeks gestation. When placental failure exists there is a sudden flattening of growth before this time. Low growth potential is shown as a persistently low growth rate from early in the second trimester. In a study of 406 high risk cases, ultrasonic cephalometry was shown to be reliable in the detection of the small-for-dates fetus and in indicating those fetuses at risk from antenatal or neonatal asphyxia.

Endocrine parameters of fetal well-being.
P. J. Keller, Zurich.

Monitoring the intrauterine state of the fetus in high risk pregnancies still encounters major problems. Continuous assessment of a number of endocrine parameters, which reflect fetal or placental functions, are now very useful for early detection of fetoplacental distress.

Oestradiol, the main oestrogenic compound in pregnancy, reflects primarily the fetal condition, as its biosynthesis in the placenta depends on 16-hydroxylation of precursors such as dehydroepiandrosterone (DHEA) by the fetal liver. This function may also be tested specifically by measuring the conversion rate of exogenously administered DHEA into oestradiol. Both tests are suitable for monitoring the fetal state in a number of high-risk pregnancies. The incidence of false-positive and false-negative results, however, is considerable.

Progesterone and pregnanediol, its main metabolite, are products of the placenta, which are not much dependent on the presence of the fetus. Values are decreased, therefore, in cases of pronounced placental insufficiency only. False-positive results are rare, false-negative findings very common.

Human placental lactogen (HPL, HCS) and human chorionic gonadotrophin (HCG) are protein hormones, which are mainly produced in the syncytiotrophoblastic cells. Due to its metabolic characteristics, i.e. extremely short circulatory half-life and independence of the renal clearance, HPL is a very suitable parameter for early prediction of placental distress. False-negative results are extremely rare, falsely positive results, possibly indicating very slight placental alterations, are quite frequent. HCG is more suitable for diagnosis of disturbances in early pregnancy than in the last trimester.

Placental function can also be judged by measuring the heat-stable alkaline phosphatase (HSAP). Interpretation of results, however, is critical. Extensive comparative studies suggest that the most reliable results in the prediction of fetoplacental distress are obtained by combining two or three of these endocrine methods.

Care of fetus during labour. T. Wheeler, London.

In the last 10 years two new techniques have enabled the obstetrician to be more objective in the management of fetal distress during labour. These are the assessment of fetal pH by fetal blood sampling and continuous monitoring of the fetal heart after the development of suitable monitors, that are now produced commercially.

At King's College Hospital a combination of heart rate monitoring and fetal blood sampling has been used for any fetus thought to be at high risk either from some complication during pregnancy or if traditional signs of fetal distress arose in labour. (Meconium stained liquor or abnormal fetal heart rate detected by stethoscope.)

Continuous monitoring of the fetal heart provides considerably more information about cardiac behaviour, particularly during contractions. A new classification of this behaviour was required. The heart rate that existed between contractions, previously measured with the stethoscope, was referred to as the baseline heart rate. Levels about 160 bpm were defined as a baseline tachycardia, those below 120 bpm as a baseline bradycardia.

It was the behaviour of the heart rate to the potential stress of the contraction itself that could give additional information of fetal wellbeing. At times the contractions were associated with short lasting bradycardias referred to as decelerations. These decelerations were divided into 2 groups, distinguished by their relation in time to the contraction. When the deceleration was delayed so that its recovery to the baseline was only completed some time after the end of the contraction this was referred to as a late deceleration. This pattern of behaviour was usually a sign of fetal asphyxia and associated with babies born in poor condition at birth.

The difficulty in managing labour from fetal heart behaviour alone was that abnormal patterns did not necessarily indicate how severely affected the fetus would be. Such patterns were therefore regarded as an indication for collecting a fetal blood sample. The fetal pH was taken as the final guide by which obstetric management would be decided. Delivery was expedited with pH values of 7.20 or below.

Reviewing the results of monitoring 288 high-risk cases, selected antenatally, it was found that 55% had abnormal fetal heart rate patterns and of that group, 20% had low fetal pHSs. The important point was that the abnormality in the FHR preceded the drop in fetal pH, thereby providing an early warning of fetal distress. Furthermore, of the cases with abnormal FHR patterns, 33% showed no sign of clinical fetal distress emphasizing the limitations of clinical methods alone in the detection of fetal distress.