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Abstracts for plenary spoken sessions


Between December 1983 and August 1986, 84 children were assessed for possible liver transplantation. Eighteen, mainly infants with biliary atresia, were not accepted because of features which made successful transplantation unlikely. Four children were withdrawn from the programme by their parents; nine died before a donor of suitable size or compatible blood group could be found; nine await transplantation; nine have been accepted for liver transplantation but are at present sufficiently well for this to be postponed. Thirty five, aged 7 months to 16 years, had liver grafts. Of these, 17 had biliary atresia, eight cirrhosis following hepatitis in infancy, five fulminant or subacute hepatic failure, three malignant liver tumours and two metabolic disease. Fifteen died, nine in the first two months mainly from primary graft failure or vascular thrombosis, later deaths being due to rejection, infection, or dissemination of malignant disease. Two died of disease in other organs with a normally functioning transplanted liver; two of the survivors have had a second liver transplantation. Three have significant hepatobiliary problems which may require retransplantation. The majority of survivors are engaged in normal activities for their age, growing and developing satisfactorily with normal biochemical tests of liver function and complete regression of cirrhosis. Their excellent quality of life is encouraging. Lack of donors, particularly for young infants and prevention of postoperative rejection and infection are continuing problems.


Following the availability of a diagnostic test for AIDS at the Princess Margaret Hospital, Nassau, in June 1985, 27 children were found to be seropositive during the following 13 months. They were born to 18 mothers, 14 (78%) of whom were from Haiti. Nineteen (70%) of the children were of Haitian origin. Sixteen mothers were seropositive and symptom free. Two were not tested, one dying earlier from salmonellosis. The age at diagnosis of the 27 children ranged from birth to 6 years. Twenty three were symptomatic and the remaining four were identified during family screening. After the birth of a positive child in a family all subsequent children in this series were seropositive, although one identical twin did not develop antibodies until 18 months of age. All the 19 children with clinical AIDS became symptomatic within 18 months of birth and suffered from repeated bacterial infection of the respiratory or gastrointestinal tracts; 74% failed to thrive; 47% developed chronic lung disease; and 63% persistent candidiasis. Survival time from the onset of symptoms among the nine (47%) that died during the study period ranged from two weeks to three and half years. Four other seropositive children (2–6 years old) were in the prodromal phase in July 1986.

Prospective trial of operative (Op) versus non-operative (N-op) treatment of vesico-ureteric reflux (VUR): five years’ observation. C M Taylor (on behalf of the Birmingham Reflux Study Group).

The study design and results of two years’ observation on 96 children were reported previously. Analysis now extends to 161 children followed up for two years, of whom 104 were followed up for five years. VUR was abolished in 98% of Op cases, whereas grade III VUR persisted in 56% of N-op ureters at two and five years. One Op and one N-op patient progressed to endstage renal failure, and another four with bilateral scarring were hypertensive.

Between treatment groups no significant differences were found in incidence of urinary tract infection, 51 Cr-EDTA slope clearance, overnight urine concentration, renal growth, scar progression,


In order to discover how early immune changes can occur before the onset of insulin dependent diabetes we studied prospectively non-diabetic identical twins of insulin dependent diabetics. The twins were examined for the presence of autoantibodies to islet cells and insulin and activation of T lymphocytes expressing the HLA-DR antigen. Results were compared with those in the controls of similar age and sex. Of the non-diabetic twins, seven developed diabetes (median age at diagnosis 14, range 12–27 years, 4 females). The seven twins were tested on 40 occasions between 0·5 and 11 years before the onset of diabetes when the fasting blood glucose was normal. Complement-fixing islet cell antibodies were found in all seven twins when first tested and four also had insulin autoantibodies. In addition, all the twins, when tested 0·5 to three years before diagnosis, had levels of activated T lymphocytes above 0·4%—that is, above the control range. In conclusion, we have shown that immune changes can occur up to 11 years before the onset of insulin dependent diabetes, and involves activation of both B and T lymphocytes.

Outcome of childhood herpes simplex virus encephalitis. P Habibi, H Holzel, E Brett, J Wilson, and R Levinsky (London).

Twenty cases of herpes simplex virus encephalitis (HSVE) have been diagnosed at our hospital over the past 12 years. Seven received antiviral therapy with acyclovir, while the other 13 were treated supportively, or also received therapy with adenine arabinoside. The overall mortality was 20%, but no deaths occurred in patients treated with acyclovir. The outcome in the survivors was better in the acyclovir group, but in all cases, depended on the level of coma at diagnosis. When the interval between presentation and commencement of antiviral treatment was greater than three days, the survivors were severely neurologically handicapped. Prompt diagnosis was aided by the use of neuroradiology and electroencephalography. Confirmation in all cases was by antibody conversion and/or by isolation of the virus from brain tissue. Fourteen had CT scan abnormalities suggestive of HSVE, but in five the initial CT scans were normal. The first EEG was abnormal in all cases, but in three the findings were initially not typical of HSVE. Brain biopsy provided early confirmation of the diagnosis in three cases. Since brain biopsy is so invasive and as acyclovir is a safe effective drug for herpes simplex virus, early treatment is recommended even on suspicion of the diagnosis of HSVE.

The development of ‘targeted’ radiotherapy to treat central nervous system tumours. L S Lashford, H B Coakham, A G Davis, and J T Kemshead (London and Bristol).

Considerable progress has been achieved in the
control of central nervous system tumours by the judicious use of radiotherapy. However, effective employment of this treatment may damage the developing child and result in both impaired growth and intellectual development. A strategy for dealing with this problem is to attempt the ‘targeting’ of radiotherapy to tumour deposits using monoclonal antibodies. To investigate the feasibility of this approach the intrathecal administration of radio-labelled antibodies has been explored in both non-human primates and patients with leptomeningeal tumour. The studies have taken two forms: (i) an investigation of the biodistribution of tumour binding and non-binding antibodies; and (ii) a pilot study of high dose 131-I monoclonal antibodies in patients with leptomeningeal tumour. From this work it has been possible to demonstrate that a uniform distribution of 131-I monoclonal antibodies can be obtained within the subarachnoid space. Non-binding antibody is rapidly cleared from the central nervous system and appears as intact radiolabelled antibody within the vascular compartment. In the presence of tumour it is possible to obtain selective binding of antibodies to tumour and these 131-I monoclonal antibodies stay in association with tumour for many days. Patients with relapsed leptomeningeal tumours have tolerated up to 45 mCi of 131-I intrathecally with minimal acute toxicity. Four to five therapeutic responses have been obtained. This new approach to the delivery of neuraxis radiotherapy appears effective, and is likely to be a less toxic form of delivering radiotherapy. CNS lymphoma, leukaemia, and medulloblastoma are all amenable to this approach.

**Preschool vision screening: a case for rationalisation.**

S L Stewart-Brown and M N Haslum (Bristol).

We report the results of a survey of preschool vision screening practices in the 165 health districts of England and Wales: the survey was undertaken at the end of 1984 and the response rate was 81.3%.

A remarkable range of tests were reported to be in use, applied at a variety of ages from 3 months to 5 years. Two districts reported carrying out no preschool vision screening at all, while 36 districts aimed to test all children’s visual acuity on three or more occasions, and 38 aimed to perform cover tests this frequently. Thirteen different types of acuity test and 10 different types of ocular muscle balance test were in use. Only 25% of districts were able to report the proportion of children cover tested in the previous year and only 10% the rate of referral to investigation from their screening programmes.

Research into visual acuity screening in infancy has demonstrated its lack of efficacy. Results from trials of treatment for amblyopia and squint have cast doubts on the value of screening programmes for the detection of these conditions. The principal challenge for the Child Health Services in the 1980s is to find ways of rationalising ineffective and expensive activity. Preschool vision screening would appear to be a good place to start.

**Gastro-oesophageal reflux in the preterm infant.**

S J Newell, M E I Morgan, G M Durbin, and I W Booth (Birmingham).

The incidence, severity, and natural history of gastro-oesophageal reflux (GOR) in preterm infants is unknown. We have therefore studied GOR in the neonatal intensive care population. Continuous intraoesophageal pH was monitored over 24 hours using a novel 1 mm antimony pH electrode (Synectics Medical). Electrode position was determined by manometry and the lower oesophageal sphincter pressure (LOSP) measured. Fifty one measurements were made on 29 patients (post-conceptional age (PCA): 26–39 weeks). They had (mean ± SEM) 12.1(2) episodes of GOR per 24 hours. Intraoesophageal pH was 4 for 4%(0-9)% of the total time. The longest episode during each recording was 17(4-6) minutes.

GOR was most likely to occur at the time of physioterapy, oropharyngeal suction, and nappy change (p<0.001), and was also increased post-prandially (0.05<p<0.1). Reflux was increased to a lesser extent in the left lateral position compared with a right lateral and prone positions. There was no correlation between GOR indices and PCA, gestation, or LOSP. Infants receiving xanthine for apnoea had a two-fold increase in GOR (p<0.05).

A subgroup of six infants with recurrent apnoea unresponsive to xanthine had markedly more severe GOR than all other infants studied (p<0.001). A rapid reduction in the frequency of apnoea followed abolition of GOR with thickened feeds.

In the neonate GOR has been implicated in pulmonary disease and recurrent apnoea. We have found that GOR is common in the preterm baby, and have defined a number of predisposing factors with consequent implications for nursing care. We have also found an important subgroup with severe symptomatic disease which may be successfully treated.

**Testosterone therapy in boys with delayed puberty.**

M D C Donaldson and D C L Savage (Bristol).

Delayed puberty, often associated with short stature, is a common problem in the paediatric clinic. These boys’ retarded growth and sexual develop-
ment causes considerable distress during adolescence. Because testosterone is widely believed to accelerate bone maturation disproportionately and thus reduce final height this treatment is often withheld.

Thirty three boys, aged 12.0-17.7 (mean 14.8) years, were treated with testosterone enanthate (125 mg intramuscularly) monthly for three months. They were seen half yearly and heights (Harpenden stadiometer), skeletal maturation (Tanner RUS (TW2), and pubertal status (Tanner and Whitehouse were measured. At six months there was a distinct advance in pubertal status and an increase in height velocity from 4.4 to 9.7 cm/year. The boys' morale and confidence increased impressively. No serious side effects were seen. The Table shows the effects of treatment on height prediction and height standard deviation score for bone age.

<table>
<thead>
<tr>
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<th>Five years</th>
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<tr>
<td>Height SD score</td>
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<tr>
<td>bone age</td>
<td>−91</td>
<td>−17−17**</td>
<td>−10−9*</td>
<td>−10−9</td>
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<tr>
<td>Height prediction</td>
<td>166.6</td>
<td>166.3*</td>
<td>167.3*</td>
<td>167.5</td>
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<tr>
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<td>11</td>
<td>8</td>
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** = p<0.05  *=NS compared with baseline

Treatment with testosterone effectively alleviates the main problems of delayed puberty, and our data suggest that at this dosage it has no significant effect on final height.

Antidiuretic hormone release after surgery is appropriate or inappropriate? B A Judd, G B Haycock, and C Chantler (London).

Hyponatraemia following surgery has commonly been attributed to an inappropriate release of antidiuretic hormone (ADH) caused by ‘stress’. Whilst ADH levels may be elevated, this may be a physiological response to hypovolaemia. Such a distinction is important as it would lead to different approaches to fluid management. We studied two groups of children undergoing routine tonsillectomy, a study group of six children who received intravenous 0-9% saline at 1750 ml/m2/day peri- and postoperatively, and a control group of seven children who received no fluid. We assessed factors associated with hypovolaemia and ADH release. Mean values for each child of levels at 1½, 3 and 6 hours following surgery are shown in the Table.

There was no significant difference in plasma osmolality. The results suggest hypovolaemia occurs in association with raised ADH levels and infusion of saline suppresses this response. We would suggest that patients following surgery do not have inappropriately raised ADH levels, and more liberal use of fluids, especially saline should be used.


The more frequent use of antenatal ultrasonography has resulted in the increased detection of fetal renal tract abnormalities. Since many of these would have remained asymptomatic their detection has posed problems with the choice and interpretation of antenatal and postnatal investigations as well as the timing of surgical intervention for lesions whose natural history has not been clearly defined. We report 40 cases investigated in the period 1982–86. Males were more commonly affected than females (2:3:1), and the detection rate increased throughout the study period. Gestational age at detection ranged from 18–39 weeks (mean 32.7 weeks), the majority being detected in the third trimester. Most cases were reported as showing cystic change or hydronephrosis with few specific diagnoses. Fetal surgery was undertaken in two cases, which, in retrospect, did not require intervention. Patients were investigated postnatally by a combination of ultrasound, radio-isotope scans, MCU, and IVP. Diagnoses included PUJ obstruction (45%); multicystic kidney (12%); vesicoureteric reflux (10%), and VUJ obstruction (10%). Four patients died within 14 days of birth (one with chromosomal abnormality). Twenty six of the 40 patients had surgical procedures with pyeloplasty (40%) being the commonest operation. Close cooperation between all those involved in the care of the mother and child is essential if accurate counselling is to be provided, inappropriate surgical intervention avoided, and the natural history defined.


Cerebral injury from haemorrhage and ischaemia is
a major cause of poor outcome in intensive care of very low birthweight infants. Current hypotheses suggest that impaired cerebral autoregulation allows blood pressure to be the main determinant of cerebral blood flow; hypertension and high flow causing haemorrhage, and hypotension producing low flow and ischaemia.

Hourly systolic, diastolic, and mean blood pressures were recorded directly on 135 very low birthweight infants in intensive care during the first four days of life. Values for survivors and not affected by drug administration were used to derive weight/age centiles. In the whole group ultrasound evidence of intraventricular haemorrhage correlated well with periods of hypotension, but not of hypertension. Ischaemic lesions did not correlate well with periods of hypotension, but were associated with previous haemorrhage. The findings suggest that hypotension predisposes to primary intraventricular haemorrhage and that later parenchymal ischaemic lesions relate to local factors (possibly related to thrombus formation) rather than systemic hypotension.


In the sick neonate lacking cerebral autoregulation, periventricular haemorrhage (PVH) and periventricular leukomalacia (PLV) have been attributed to excessive and insufficient cerebral blood flow, respectively.

In this study we used computed continuous acquisition of direct mean arterial blood pressure (MAP), together with high resolution cranial ultrasonic sound scanning in 33 infants of gestational age 26–30 weeks. Any infant with a significant lesion at the start of recording was excluded. Scans were classified independently into normal, mild, or transient changes, and persistent severe lesions (large PVH ± parenchymal extension or cystic PVL), or death within 48 hours of birth. Twelve infants (mean birth weight 1040 g, mean gestational age 27-8 weeks) maintained MAP of ≥30 mmHg and had no severe lesions; 21 infants (mean birth weight 1060 g, mean gestational age 27-7 weeks) had MAP below 30 mmHg for > one hour, and nine of these had severe cerebral lesions (p<0.01). The periods of low MAP preceded the appearance of the lesions.

Intervention to maintain MAP should be further evaluated in terms of its effect on morbidity and mortality of sick neonates, and the underlying mechanisms causing hypotension deserve further investigation.

Intellectual outcome following congenital CMV infections. S Logan (London).

It has been suggested that children with congenital CMV infection, even if apparently asymptomatic, may suffer minor damage leading to intellectual deficit. To examine this hypothesis 103 congenitally infected children have been followed up with matched controls for between nine months and six years. The cases were identified by screening some 30 000 newborns at three London hospitals for the presence of cytomegalovirus.

To assess their intellectual development Griffiths assessments were performed at 2 years and Weschler preschool and primary scale of intelligence tests at 5 years. Nine children with bilateral moderate to severe sensorineural hearing loss and/or cerebral palsy were identified. When these children were excluded from the analysis, no significant differences were found between cases and controls on either of the outcome measures.

In conclusion, there was no evidence to suggest that apparently undamaged children suffered any ill effects from congenital cytomegalovirus infection. Furthermore, all children with significant handicap were identified by 9 months, so parents with asymptomatic children may be reassured.

Improved primary care does not prevent the admission of children to hospital. T P Hutchison, L Durojaiye, and R J Madeley (Nottingham).

In Nottingham Health District a study has been carried out whose aims were: (i) to compare acute paediatric medical admissions in 1985 with those in 1975 and to relate any differences to changes in services; (ii) to measure the numbers of preventable admissions, working on the hypothesis that this would give an indication of the performance of community services.

A structured questionnaire was completed with parents and information obtained from notes of all children admitted with acute medical problems during October 1985. Results were compared with a similar study undertaken in 1975 by Wynne and Hull on children from the same catchment area. Further information for all health districts in Trent Region was obtained from hospital activity analysis data relating to these 10 years.

There has been a 100% increase in children’s admissions in Nottingham, with similar increases throughout Trent Region. Apart from ingestions, there are increases in every diagnostic category, with a six-fold increase in the admission rate for lower respiratory tract problems, mostly asthma and wheeze. There were only 9% ‘social admissions’.
The idea of certain admissions being preventable is not a useful concept. Improvements in primary care have not been accompanied by a fall in hospital admissions.


Thirty babies, birth weight <1500 g, had weekly measurements of plasma calcium, phosphate, creatinine, and alkaline phosphatase. A urine sample collected at the same time was analysed for calcium, phosphate, and creatinine, and the tubular reabsorption of phosphate (TRP) and calcium (TRCa) calculated using a standard formula. Radiography of the wrist was performed between four to five weeks. Plasma phosphate and TRCa were the best predictors of those babies who subsequently developed rickets. The reduced TRCa was directly associated with the degree of phosphate depletion and could be corrected by supplementation. Radiographic evidence of rickets was found in 14 babies (50%); seven had severe phosphate depletion at the time of the first sample, suggesting that the phosphate depletion was of prenatal onset. Those babies who subsequently developed rickets could be predicted (80% by week two, 100% by week three). Supplementation with phosphate, sufficient to cause a fall in the TRP, reduced the incidence of rickets. In five babies there was a reduced TRP associated with a low phosphate and calcium which responded to calcium supplementation (secondary hyperparathyroidism). There was no evidence of immaturity of the renal tubule with a tubular reabsorption of >95%. Serial monitoring of TRP and TRCa is a simple and reliable way to predict babies who will develop rickets and is valuable in the monitoring of preventive therapy.

**Fine motor performance in 6 year old extremely low birthweight survivors.** N Marlow, B L Roberts, and R W I Cooke (Liverpool).

With the exception of gross impairments, detailed motor performance of extremely low birthweight survivors is rarely reported. We have studied fine motor performance in 6 year old children with birthweights of <1251 g attending normal school. Thirty of 33 survivors born in 1980 were examined at school with an age and sex matched classmate as a control. The testing included formal neurological examination, an IQ (WPPSI) and the test of motor impairment (Henderson revision; 1985), which comprises eight tests of manual dexterity, ball skills, and static and dynamic balance.

Two of the study children were in remedial classes, the remainder were in normal classes, including two children with hemiplegia. Study children were significantly more motor impaired (median score 6-0; range: 0-16) compared with controls (2-75; range 0-10) (p=<0-001). On all but six pairings the study child scored higher (worse) than the matched control. These differences persisted after removal of the four children with identified impairments. Although the mean (SE) IQ of the study group (107-5 (2-4)) was lower than those of the control group (117-9 (2-3); p=<0-001). The motor impairment scores were independent of intellectual and other socioenvironmental influences. Extremely low birthweight survivors frequently show significant impairment of motor performance, which if unrecognised, may contribute to school failure.

**The association of left ventricular tissue bands with vibratory innocent murmurs.** V A Harpin and I Ostman-Smith (Oxford).

Left ventricular tissue bands are found in up to 48% of post mortems and in between 0-4 and 61% of patients referred for echocardiography. They are generally not considered to be clinically important but have been associated in some cases with systolic murmurs. On retrospective analysis of 197 children referred to our cardiac clinic with asymptomatic murmurs, 83% had left ventricular tissue bands. A prospective study was therefore commenced. Fifty five children with asymptomatic systolic heart murmurs were examined, assigned to a diagnosis, and then underwent echocardiography blindly by a second observer. Mean age at examination was 3 years 6 months. Mean age when murmur was first heard was 2 years 8 months (range 0-10 years). Forty nine per cent had a family history of presumed innocent murmurs and 13% of heart disease. All had ECG and CXR within normal limits. Most had grade 2/6 murmurs (64%); 29% were grade 3/6. All except one were vibratory. Fifty three per cent radiated to the neck, 16% had early systolic clicks. On echo, 89% had an apical left ventricular band, which in 49% was associated with another finding; 16% had bands in the left ventricular outflow tract, 45% had asymmetrical aortic valves, and one a bicuspid valve. Fifty two of 55 were exactly defined by the blinded examiner.

Left ventricular tissue bands are the only morphological basis for a vibratory Still's murmur. Recognition of this common diagnosis could prevent many 'routine' cardiac follow ups and unnecessary antibiotic prophylaxis. Asymmetrical tricuspid aortic valves
are a significant cause of asymptomatic murmurs in childhood.


The clinical impression that glycaemic control in children with diabetes is worse in the winter was tested by determining whether a seasonal variation in glycosylated haemoglobin (HbA_1c) exists. One hundred and twenty five patients with a minimum of four estimations of HbA_1c available were studied. HbA_1c levels were measured by an ion exchange column method and seasonal variation was analysed by cosinor-rhythmometry. There was a significant seasonal variation in HbA_1c levels (p<0.001) with a peak in mid February and a nadir in mid August. The mean HbA_1c value was 9-93% (SD 0.06%) and the mean amplitude of oscillation was 0.34%, with 95% confidence limits of 0.16% and 0.53%.

It is concluded that there is a seasonal variation of glycaemic control as reflected by HbA_1c levels, but because it is small it is unlikely to be of importance in the clinical management of most diabetic children, however, in a minority, for whom variation of glycaemic control is greater, adjustments in treatment may be indicated.

Sexual abuse, the beginning of an epidemic. C J Hobbs and J M Wynne (Leeds).

In the past two years we have seen 306 children with definite or probable sexual abuse. There were 218 girls (mean age 7.85 years) and 88 boys (mean age 8.12 years), the youngest child was 4 months (Table).

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<tr>
<td>Girls</td>
<td>75 27</td>
<td>72 31</td>
<td>57 24</td>
<td>14 6</td>
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<td>Boys</td>
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The abuses included fondling, touching, masturbation, oral, anal, and vaginal intercourse, as well as involvement in pornography and prostitution. Anal abuse was common in both sexes alike at all ages. Natural fathers were the commonest perpetrators but women also abused. Children presented following disclosure or non-accidental injury with physical or psychosomatic symptoms, disturbance in behaviour, or after detection of abuse in another child. Association with other forms of abuse was common. Referrals were received from parents, health and social work professionals, schools, nurseries and police. Multidisciplinary assessment included case conferences.

Paediatricians need to be prepared to recognise and manage this emerging problem.

Changes in genetic counselling for cystic fibrosis since discovery of DNA polymorphisms linked to the gene. M Super (Manchester).

At the time of the discovery of DNA probes linked to the cystic fibrosis (CF) gene, more than half the parents of children at the cystic fibrosis clinic at Royal Manchester Children's Hospital had already had sterilisation. Of the 17 couples still fertile and together, all expressed interest in having their genotypes tested, and seven, all parents of younger children, said that they would undertake further pregnancies if testing proved the family informative. None of these would have planned pregnancies before the existence of tests.

Genetic counselling of such parents has suddenly become very factual, with a basic discussion on DNA polymorphisms and the mechanics of prenatal diagnosis using these methods being needed. There are various options which alter, depending on the genotype and the proximity of the exact probes that show linkage to the cystic fibrosis locus. One can offer very accurate prenatal diagnosis or exclusion in the first trimester—often but not always. Some couples are not interested in second trimester tests, which are sometimes needed.

Genotyping of families should be undertaken before the onset of pregnancies to help couples exercise their options coolly. Until simple cures for cystic fibrosis are discovered there will be increased requests for prenatal diagnosis.

Causes and associations of severe specific disorders of speech and language. R J Robinson (London).

I studied 82 children with severe and persistent specific language disorders, looking for possible causal factors.

The study confirms the well known excess of boys (sex ratio 3.8:1), and the familial tendency; 40% of the children had a family history of speech disorder, and 1 in 5.2 of their siblings was also affected. Twenty seven per cent of the children had a definite pre-, peri-, or postnatal factor which could plausibly account for their specific language disorder.

There was an association with seizures, which had occurred in at least 21% of the children.
A miscellaneous collection of disorders or variants was found more commonly in these children than in the normal population. These included left handedness (29%), clumsiness (abnormal Stott score in 89%), walking after 18 months (22%), undescended testicles (11% of boys), and being a twin (7.3%).

Specific development language disorders cannot be accounted for by a single causal factor. Based on the hypothesis of Geschwind and Galaburda, I suggest that they are the result of interference with development of the left cerebral hemisphere from various factors, with males being more vulnerable, and that these factors may lead to a number of associated anomalies.

**Campylobacter pyloridis in children.** E J Eastham and T S M Elliott (Newcastle upon Tyne).

The spiral bacterium *Campylobacter pyloridis* has been recently implicated in adults as the aetiological agent in type-B non-immune gastritis and also possibly in duodenal ulceration. The former condition is frequently missed at endoscopy unless biopsies are taken, but this is not done routinely in paediatric practice. We have therefore performed antral biopsies on all children undergoing upper GI endoscopy in our hospital during the past eight months. So far, six (20%) of 30 cases have shown histologically active gastritis with positive cultures for *C pyloridis*. None of these children had duodenal ulcers, and in only three were there visible changes—a fine lymphoid nodular hyperplasia. In addition, in every case (and in none of the remainder) there were circulating specific *C pyloridis* IgG antibodies, all in very high titres. Eradication of the organism with antibiotics and a bismuth preparation has resulted in total resolution of symptoms and histological improvement. We suspect that this organism may be an important causative agent in paediatric upper GI symptomatology, and feel that routine antral biopsies should be performed for both culture and histology in all children being endoscoped for diagnostic purposes.

**Renal transplantation in children less than 5 years of age.** S P A Rigden, M Bewick, C Chantler, G B Haycock, and G Koffman (London).

Between September 1979 and May 1986, 28 children (23 boys, five girls) aged less than 5 years (mean age 2 years 10 months, range 9 months to 4 years 11 months) have received 33 renal transplants. Four children have been retransplanted, one twice. There were 30 cadaveric grafts and three from live related donors. The mean weight at transplantation was 11.3 kg (range 7.0–19.0 kg). Primary diagnoses were renal dysplasia in 18 patients, congenital nephrotic syndrome in five, nephronophthisis in two, and one case each of polycystic kidney disease, haemolytic uraemic syndrome, and glomerulonephritis. Twenty one grafts were performed using prednisolone and azathioprine immunosuppression, and since October 1983, 12 with cyclosporin A and low dose prednisolone.

The five year actuarial patient survival is 78%; six children have died, five following graft failure, which in three resulted from renal artery stenosis. The five year actuarial survival of the 28 first grafts is 64%; causes of graft loss were acute rejection (one case), chronic rejection (two), arterial thrombosis (one), technical failure (one). Three of the five retransplants were lost within two weeks. Mean GFR (± SD) was 67 (20)ml/min/1.73m² SA one year post-transplant (17 patients) and 70 (23)ml/min/1.73m² SA five years post-transplant (seven patients). Mean height SDS improved from −2.81 at transplantation (17 children) to −0.95 (7 children) five years later.

These results are comparable with those obtained in older children and support the contention that renal transplantation is the treatment of choice for even very young children with end stage renal disease.