Early complications of diabetes mellitus

Sir,—Dr Gibb and her colleagues have described in detail their findings of early physiological changes of renal function in children with type 1 diabetes dependent diabetes mellitus (IDDM).1 They conclude that an abnormally raised urine albumin excretion is associated with a high glomerular filtration rate and that serial follow up of these early markers is required to study their predictive roles in the development of nephropathy in IDDM. My concern regarding this statement is the suggestion that the measurement of glomerular filtration rate should be routine in children with diabetes.

Both glomerular filtration rate and renal plasma flow increase significantly with a variety of hormonal and metabolic disturbances. These include hyperinsulinaemia, hypertriglyceridaemia, increased concentrations of circulating growth hormone, hyperkalaemia and hyperglycaemia.1,2 The effect of glycosuria on the glomerular filtration rate measurement is erratic and influences the analysis of renal plasma flow when estimated by paranaminohippurate (RNAP) clearance (RN).3 The authors state that the measurement of renin activity rate between 10 and 15 is abnormal in IDDM patients and that the renin activity rate in IDDM is predicted to increase with the degree of glycosuria.

The subjects in the study of Gibb et al had diabetes of various years' duration and all had poor diabetic control with glycated haemoglobin (HbA1) 11-2 to 13-4% compared with a normal range of 5-0 to 8-0%. The measurements of the glomerular filtration rate were undertaken after breakfast which, from their description, almost certainly contained a considerable amount of carbohydrate. It is therefore likely that the blood glucose concentration during the glomerular filtration rate measurement period was abnormally raised resulting in glycosuria. Therefore, the design of their study may account for the abnormally raised glomerular filtration rate and the observation of a normal size kidney assessed by ultrasoundography. I would contest that if glomerular filtration rate is to be measured in diabetic children, an attempt to standardise the metabolic milieu is necessary. Such manoeuvring would make routine measurement of glomerular filtration rate a difficult procedure for most paediatricians.

S A GREENE
Department of Child Health, Ninewells Hospital and Medical School, Dundee DD1 9SY

Dr Gibb comments:
Dr Gibb suggests that complicated and invasive clamp techniques be used to standardise the metabolic milieu of children with IDDM before the measurement of glomerular filtration rate. He suggests that glycosuria may cause a decrease in arterial pressure and that filtration in these children. We measured glycosuria throughout the glomerular filtration rate procedure in these children, and in accordance with his statement that the association with glomerular filtration rate (GFR) was 'erratic' we observed no correlation at all between the two variables.3 Furthermore, in our children, glomerular filtration rate measurement when repeated a year later was remarkably consistent and the association with urine albumin excretion and renal size remained.2

The predictive value of hyperfiltration in IDDM cannot be determined from cross sectional studies and our one year follow up results merely confirm associations noted at baseline. We therefore suggested that much longer follow up is required to determine the predictive value of hyperfiltration in diabetes.

At no stage did we state or suggest that glomerular filtration rate should routinely be performed on all children with IDDM. At the present stage of knowledge, this would be quite wrong outside the research situation.


Intracebrum immunoglobulin in HIV infection

Sir,—Hague and colleagues have reported the use of intravenous immunoglobulin in eight children infected with human immunodeficiency virus (HIV).1 They have been enthusiastic about its beneficial effects on both weight gain and frequency of infectious episodes. Furthermore they suggest that the intravenous immunoglobulin treatment resulted in significant saving of costs, despite the expense of the treatment, as a result of a decrease in the number of days the children spent in hospital.

We do not use routine intravenous immunoglobulin in children with symptomatic HIV infection and do not consider that their clinical course has been any worse than the children described by Hague et al. Five symptomatic children aged 22 months to 10 years infected vertically with HIV are attending the Hospital for Sick Children, Great Ormond Street, London. Failure to thrive in the first 18 months of life was prominent in the two children documented since birth, but resolved spontaneously with no specific treatment. In addition, numbers of infectious episodes and admissions to hospital were more frequent in the early months of life in all children. If we had begun intravenous immunoglobulin in these children at the onset of symptoms we might be claiming the apparent success of this treatment. Furthermore, based on the cost estimates of Hague et al we would have cost the National Health Service over £50 000.

There are major difficulties in the interpretation of uncontrolled studies of treatment efficacy, especially in a disease which is variable, and where the outcome measures may be related to age. HIV infection in children has...