lating insulin preparations used in interpreting data of insulin biogenesis.

Yours sincerely,
J. G. Devlin

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More on the role of insulin in the treatment of diabetic ketoacidosis

Dear Sir,

Jakobsen et al. [1] have provided valuable experimental support for the postulate that insulin plays a pathogenetic role in two of the complications resulting from the treatment of diabetic ketoacidosis (DKA)-namely the adult respiratory distress syndrome (ARDS) or its more benign counterpart, a widening of the A-a O₂ gradient, and cerebral oedema, usually "benign" and very rarely fatal [2, 3].

Insulin has previously been shown to result in a large decrease in plasma volume and a reduction in the plasma albumin pool when administered intravenously to diabetic patients who were not ill [4]. Furthermore, insulin is known to be capable of decreasing renal sodium excretion by enhancing sodium reabsorption in the diluting segment of the distal nephron [5] and resulting in major fluid and sodium retention in previously uncontrolled diabetic patients [6] - so called "insulin oedema".

It is evident that most adults [7] and probably, children [8] develop subclinical or "benign" cerebral oedema [3] during the course of therapy for DKA.

We have previously described ARDS developing during the treatment of severe DKA [2, 9]. One of the survivors in our most recent series [9] had his insulin therapy inadvertently delayed for some 3 h after admission. It was this serendipitous occurrence which suggested insulin as a possible pathogenetic factor in ARDS as well as cerebral oedema developing the treatment of DKA.

An additional piece of supporting clinical information derives from the review by Arem and Zoghbi [10] describing 8 patients with massive insulin overdoses. Two of their eight cases plus an additional two cases from their literature review demonstrated ARDS. Furthermore, we have recently treated an elderly woman who had fatal hypoglycaemia secondary to the use of chlorpropamide who developed ARDS shortly after admission to the hospital.

Yours sincerely,
R. Matz

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More on the evidence for a specific heart disease of Type 1 (insulin-dependent) diabetes

Dear Sir,

We were most interested in the ensuing correspondence on this subject [1] following our paper describing the abnormalities of cardiac function in asymptomatic diabetic patients [2]. In commenting on our study, Dr. Harrower claims that neither the demonstration of abnormal ventricular function during dynamic exercise nor the presence of histological changes detected by endomyocardial biopsy support the concept of a specific heart disease in diabetes [1]. We would appreciate the opportunity to comment further.

Dr. Harrower has recently reported a study of 9 patients at the time of diagnosis of diabetes, only 5 of whom showed a change in the left ventricular ejection fraction following improvement of glycaemic control [3]. The mean resting left ventricular ejection fraction did not change. Despite the small number of patients (a criticism which he levels at our histological studies), this is consistent with the concept that the resting left ventricular ejection fraction may be influenced by hyperglycaemia.

In citing the effects of glycaemic control on left ventricular function, Dr Harrower appears however, to be unfamiliar with other publications on this topic. Goldwit et al. studied ventricular function by radionuclide ventriculography in 10 Type 1 (insulin-dependent) diabetic patients with a mean duration of diabetes of 7 years [4]. Their subjects were selected because diabetic complications were absent and it was considered unlikely that the specific heart disease of diabetes could have developed because of the relatively short duration of diabetes. Blood glucose was varied using a glucose clamp technique, and the resting left ventricular ejection fraction appeared to vary with the blood glucose; the resting left ventricular ejection