

Letter to the editor

Glucagon deficiency associated with hypoglycaemia

Dear Sirs,

With reference to the case report published recently in *Diabetologia* [1], I would submit that there is still no documented adult patient with hypoglycaemia due to glucagon deficiency. From the information summarized in Table 1, it seems clear that the patient had a profound cortisol deficiency which is much more likely to account for her fasting hypoglycaemia. Furthermore, there are several reasons to suspect that an isolated glucagon deficiency should not be able to cause fasting hypoglycaemia. Firstly, extrapolating from the data concerning the recovery of glucose concentrations following insulin-induced hypoglycaemia [2], the presence of normal catecholamine levels should compensate for any effect of glucagon deficiency. Secondly, the liver has an ability to autoregulate glucose concentrations by producing glucose when levels are low and taking up glucose when levels are high, independent of hormonal changes [3]. Thirdly, when glucagon secretion is suppressed by the infusion of somatostatin, glucose concentrations do not change, not only when insulin secretion is suppressed but even when basal insulin levels are maintained [4]. The fact that hepatic autoregulation prevents hypoglycaemia in the presence of low glucagon and normal basal insulin concentrations is evidence against a clinical syndrome of fasting hypoglycaemia caused by glucagon deficiency. In the face of these theoretical considerations and, most importantly, the adrenal insufficiency of the reported patient, I

remain unconvinced that the hypoglycaemia in this case was due to glucagon deficiency

Yours sincerely,
M. B. Davidson

References

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Book reviews

Intensive insulin therapy. D.S. Schade, J.V. Santiago, J.S. Skyler and R.A. Rizza (eds) New York, Medical Examination Publishing Co Inc. 1983. 341 pp, hardback, \$ 40.00. ISBN 90 219 0570 1

'Intensive Insulin Therapy' comes to us from four of the five US medical centres which have consistently contributed to the literature on insulin delivery, blood glucose monitoring, and hypoglycaemia in the last decade. The book bears the mark of the patronage of Paul Haycock (also contributing a useful chapter on the history of insulin therapy), and the authors are the very Americans one would have chosen for a meeting on this subject. Paradoxically this is one of the problems of the book, for none of the authors is noted for his reticence in writing papers, and readers of the transatlantic literature will be familiar with many of the sentiments expressed in the more authoritative chapters. Authorship was clearly dictated by chapter, and the change in style can be abrupt. Furthermore contributed material overlaps, so that, for example, subcutaneous insulin infusion occupies considerable space in the chapter on intensive conventional therapy, which follows that on infusion devices.

Indeed the section on 'Design of Intensive Regimens' is the weakest in the book, and bar a few pages barely lives up to its title. In the chapter on insulin infusion there are five pages devoted to the peritoneal, nasal, rectal, etc., delivery routes, while the section entitled 'Maximizing (sic) Insulin Delivery' refers you to *Diabetes Care* for useful guidelines on optimization of therapy on CSII. A table in this chapter suggests that only 40% of total insulin delivery by CSII should be given as the basal infusion, so we can look forward to another crop of papers reporting the dawn effect on pump therapy. The discussion of insulin regimens and insulin pharmacokinetics in the following chapter also fails to meet the standard of the rest of the book, with no discussion of the consequences to blood glucose con-

trol of the absorption profiles of soluble, lente and isophane insulins, and regurgitation of the meaningless concept of duration of action of insulins. The 'idealized periods of insulin effect' diagrams used at this point (and elsewhere) contrast in their naivety with the measured insulin profiles a few pages on.

Commendably the book does try to defy its title and deal with intensive diabetic, rather than insulin, therapy. Thus, there are chapters on self-monitoring of blood glucose, diet and exercise, pregnancy, and caveats (sic) of therapy. In 'Patient Selection and Management' the reader is left with the impression that unless the patient has certain educational and technical abilities, and unless he has the motivation to stick with the programme, then he is not suitable for intensive therapy. Indeed there is no discussion of how the problems of a restricted diabetic life style inevitably lead to some degree of failure to meet the goals of intensive therapy, nor how this combines with insulin pharmacokinetics to give a frequency of hypoglycaemia tolerable to each individual. Intensification of insulin therapy must be tailored to the patient, or, like one of the authors, you may record 2.5 episodes of hypoglycaemic coma per patient year in nine patients with counter-regulatory failure.

Perhaps the best chapters are at the beginning of the book, particularly the longest on hormonal and metabolic disturbances in diabetes, and the chapter on control and complications. The book is clearly aimed at up-grading the treatment given out to diabetic patients in North America, and it must be hoped that it reaches the appropriate physicians. Subliminally the clear message is that diabetology has become a specialty of its own in the last 10 years, and is still racing away from the grasp of the general physician. Is this book for you? Well your reviewer read it, enjoyed it, and learnt from it.

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