The Danger of Interruption of Insulin Treatment.

NZMJ, 1924

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Very little has as yet appeared in the journals concerning the grave danger which confronts the diabetic when, from any cause, insulin is withheld. *Blum*, *Carlier*, and *Swab* (*Bulletins de la Soc. Med. des Hopitaux*) record the case of a man who suffered from diabetes for five years and had been able to resume work as the result of insulin treatment. His supply of insulin ran out, and three days later vomiting became so severe that the stomach was intolerant even of liquid. By the sixth day he was comatose, and died in spite of the injection of 160 units of insulin.

As a somewhat similar case has occurred in connection with the Diabetic Department of the Wellington Hospital it would seem advisable to draw the attention of the profession in New Zealand to this very real danger. The patient, whose age was 52, was admitted on 24th November, 1923, 21 months after the onset of symptoms. She had lost 51lb. in weight. There was no intercurrent affection. The average excretion of sugar per day on a basal metabolic diet of 1000 calories was 24 grammes. She was discharged on 29th December, 1923, on a ketogenic-antiketogenic diet of 1900 calories with 40 units of insulin per day. On this balance there was only a trace of glycosuria, no acetone, and a blood sugar percentage of .196. As she came from the country the details of subsequent events are not fully known, but for some reason she left off taking the insulin soon after leaving hospital, and died in coma about a fortnight later.

An analogous case may be mentioned. Through a certain batch of insulin being inactive one of our patients was re-admitted in a state of coma. Fortunately a supply of insulin of a more reliable manufacture arrived that morning, and by the prompt administration of 70 units he recovered.

It would seem that a fulminating acidosis is produced when insulin is suddenly cut off, and Nature has not time to replace the metabolism of carbohydrates by that of fats and proteins. We always advise our patients to reduce their diet by one-third and to rest should their supply of insulin run out. But even this precaution may not be sufficient.

Another serious danger is the inset of some other disease, accompanied by vomiting and diarrhœa. If the patient is unable to take the prescribed diet, should insulin be withheld? Our advice, based on that given in Toronto, has been to stop the insulin until food can again be taken. So far we have not had to deal with this complication, but one of our pntients, who had been taking the inactive insulin referred to above, came back in coma and died from what proved to be uræmia. It was only after the exhibition of an enormous dose of insulin (360 units) that she was rendered sugar-free. But in spite of this she died about 24 hours later.

The authors referred to above quote an instance of a diabetic under insulin treatment who developed phlebitis first of the left, and then of the right, femoral vein. As a result he felt very weak and reduced the dose of insulin, but in 48 hours acidosis was marked. Three hundred and eighty units of insulin were required to overcome this in 24 hours.

It would seem that the dose of insulin which is sufficient in health is too small when some other disease intervenes. Probably the exhibition of alkalis in large doses in addition to insulin is indicated.

We would suggest to the Department of Health the advisability of stocking insulin for distribution to hospitals. We know that no laboratory can absolutely guarantee the potency of this valuable remedy, and, where it is found that a batch of one manufacture is inactive (as instanced above), it would be invaluable to be able to procure insulin of a different manufacture from a central depot. The product of the Connaught Serum Laboratories, Toronto, Canada, has, in our hands, proved most reliable; and it was through receiving a supply from this source that we were able to save the life

of the patient referred to above, and to cut short the rapidly increasing hyperglæmia in a number of others. It is to be hoped that the Department will very soon see its way to keep stocks of insulin manufactured in at least two different laboratories.

A point not altogether relevant to our subject, but nevertheless of interest, concerns the oft-repeated statement that a diabetic, even when on insulin, cannot do manual labour.

A young man of 25 came under our care on 11th December, 1923, with a history of two years' dieting under the *Allen* regime. His weight was 120lb., and his blood sugar on a diet of 2400 calories was .202. To-day his weight is 150lb. (height 5ft. 8½in.), and his blood sugar .164. He is a farm labourer, doing heavy work in the back-blocks beyond Taumarunui. His diet has a caloric value of 3000 and he is taking 20 units of insulin per day. He looks and feels in perfect health. Perhaps this is but a case of the exception proving the rule.