

1958, and June 30, 1959, diabetics numbered 148, exceeding all other groups. A hint that it can be avoided is shown by our ninety Quarter Century Victory Medal cases because in these patients, even after twenty-five years of diabetes, there was no involvement of the eyes when examined by specialists.

Our methods for the prevention and early discovery of diabetes in its preclinical stages should be greatly expanded. We should enlist all state medical societies, all doctors, all hospitals in the task. There should be a concentrated effort upon the relatives of known diabetics, particularly upon those above thirty years of age and especially upon all fat individuals. If each doctor would examine the urine of ten additional patients, and better still, secure analyses of the blood, consider how many new cases of diabetes would be found. Perhaps the most practical way would be to subsidize our private and public laboratories so that the tests would be free to all.

Having discovered the diabetic and prediabetic then one can treat and protect him. Today we know that

control of the diabetes pays.

As yet no one has met our criteria for the Quarter Century Victory Medal whose diabetes was not controlled, particularly in its first year. These Medal cases were the reason for our Hospital Teaching Clinic where patients can be taught control of the disease and prevention of complications and by self-service at greatly reduced hospital expense.

#### REFERENCES

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## EDITORIAL

### *HYPOGLYCEMIC INSULIN REACTIONS WITHOUT WARNING SYMPTOMS*

Hypoglycemic reactions due to the administration of insulin in diabetic patients, although usually harmless, may pose a major problem in patients who have unstable diabetes of long duration. The physician accustomed to combating hyperglycemia with keto-acidosis may well say, "A plague on both your houses," since unconsciousness occurs in this state as well as with hypoglycemia. However, the serious feature of hypoglycemic reactions recently stressed by Balodimos and Root\* arises from the fact that these reactions sometimes occurred without

the patient being aware of the usual warning symptoms. Patients of this group had learned to know the characteristic warning symptoms such as tremor, sweating, hunger or diplopia through many years of insulin administration. However, a stage was reached in which none of the usual symptoms was recognized. Patients continued to work automatically or became irrational, pugnacious, or even unconscious. These changes often occurred with striking suddenness. A series of sixty males and fifty-six females was reported among patients with long duration of diabetes treated with insulin. The average duration was eighteen years. The insulin dose varied from less than 20 units daily to 60 units. The series did not include patients who had reactions during sleep.

It did not seem that either the error of taking extra large doses of insulin or simple inattention to symptoms provided an explanation. The blood sugar levels were not strikingly different from those in other patients who had ample warning of approaching reaction.

Retrograde amnesia for periods varying from three minutes to one hour before the actual reaction was a feature in most of the patients. Electroencephalographic studies did not usually give any characteristic findings although some changes were observed in the tracings. The possibility that these reactions are actually epileptic

\*Balodimos, M. C., and Root, H. F.: *J.A.M.A.* 171:261-66, September 1959.

equivalents was thoroughly considered in consultation with various neurologists, but the use of anticonvulsive drugs did not result in any significant therapeutic benefit. Neuropathy affecting the autonomic or higher cerebral centers with actual impairment of the function of some neurons consequent upon repeated episodes of hypoglycemia might be a possible explanation.

Treatment and prevention included the division of the day's diet into five, six or seven meals. The taking of carbohydrate not only at the time of reaction but in shorter periods during the day proved of real benefit. The advantages and indeed the necessity of a constant rather than a fluctuating diet and the effect of exercise upon the action of insulin are most important points in the teaching of patients. Administration of Sorbitol, a polyalcohol, was tried with apparent benefit in older subjects but with less benefit in the younger ones. The replacement of a single dose, which includes long-acting insulin, by divided doses of insulin has often proved helpful. If a mixture of a long-acting insulin with Regu-

lar Insulin is taken before breakfast the number of units may be materially reduced by a second dose before the evening meal or at bedtime. Indeed in a few instances multiple small doses of Regular Insulin instead of the use of long-acting insulin have been effective.

It is important to instruct patients in the study of their individual symptoms. Thus, very mild, slight, warning symptoms such as lassitude, slight slowing in speech or thought, or headache must be emphasized to certain patients and accepted as warnings requiring the taking of carbohydrate. With further study of hypoglycemia and particularly further individual study in each case probably many such reactions can be prevented. The problem of these sudden reactions has serious implications, both legal and social, and is one to be approached by improvement in patient training and education and constant awareness on the part of the attending physicians.

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## BOOK REVIEWS

CLINICAL ENDOCRINOLOGY, I. Edited by Edwin B. Astwood, M.D. \$18.75, eighty-two contributors, sixty-eight chapters, 169 illus., pp. 744, Grune and Stratton, New York, 1960.

This book comprises a series of chapters on recent developments and current concepts in selected topics of endocrinology, covering six major areas: I, Pituitary; II, Thyroid; III, Parathyroid; IV, Pancreas; V, Adrenal; VI, Reproductive System. The book also contains a section discussing miscellaneous topics of current interest such as: the effect of hormones on depot fat, obesity, hormones and the skin, hormone therapy of cancer, hormonal regulation of red cell production; and angiotension, a hormone of the kidney. The final section of the book is devoted to a timely and informative discussion of hormone assay techniques and special tests.

The style, clarity and presentation, as well as the discussion of factual material, are uneven and in general tend to reflect the skill, experience, and depth of information of the large number of contributing authors. However, in spite of this criticism, most of the chapters are well written, concise, and well documented with generous use of tables, figures, diagrams and photographs. Furthermore, although the book is clinically oriented, a successful integration of the experimental with the clinical studies has been satisfactorily achieved.

One may indeed disagree with the editorial prejudice in the selection of topics and one may question the disproportionate allocation of space to some topics at the expense of others; but it is to the editor's credit that he has succeeded in covering in a single volume of this size such a wide area of topics of current interest and importance in endocrinology.

The title of the book is perhaps inappropriate in that it conveys the impression of being a textbook when in reality it is more in the nature of an extensive progress report on some of the newer developments and concepts in endocrinology. Hence, the book is not recommended as a basic source of information in endocrinology for either medical students or general physicians. Nevertheless, in bringing together the newer information on important current topics in a single volume, it should form a very useful adjunct and supplement to current textbooks in endocrinology. This is particularly true in respect to the section on hormone assays and special tests, which, in the opinion of this reviewer, is one of the best sections of the book.

THE CLINICAL SYNDROME OF DIABETES MELLITUS. By John Lister. \$4.50, pp. 234, 34 illustrations, Charles C Thomas, Springfield, Illinois, 1960.

The author, known to readers of *The New England Journal of Medicine* for his "London Post" column, has attempted a monumental feat in compressing the subject of diabetes, its ramifications, treatment and philosophy, into twenty-one chapters totaling 234 pages. The result is a text too large for an outline and too small for a reference book, but as is stated in the preface, ". . . at present there seems to be a lack of a small textbook covering the essential clinical aspects of the disease."

The book attempts too much, with a resulting heterogeneous combination of detail and superficiality. The reader finds generous portions of diabetes history combined with a pinch