Summary

The average changes in weight of groups of industrial workers (male and female) in small firms and of housewives measured during the course of the Ministry of Food's Body Weight Survey (1943 to 1949) have been compared with the calorie value of the food consumption recorded for urban working-class households in the Ministry's National Food Survey during the same years. Body weights of adults fluctuated with the calorie values of the diet. There is evidence from various parts of the country of parallel changes in the growth rates of children.

The bearing of these results on the desirable calorie levels of the national food supply is discussed.

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HAEMOLYTIC ANAEMIA TREATED BY A.C.T.H., CORTISONE, AND SPLENECTOMY

BY

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Encouraging results have been reported in the treatment of acquired haemolytic anaemia with adrenocorticotrophic hormone (A.C.T.H.), cortisone, and compound F (Gardner, 1950; Dameshek *et al.*, 1951; Davidson *et al.*, 1951; Rosenthal *et al.*, 1952). It has been suggested that this type of therapy succeeds in cases in which an abnormal antibody can be demonstrated (Dameshek, 1950), but the exact mechanism of action is still quite obscure.

A case of this type, encountered recently, has been treated with A.C.T.H., with cortisone, and, finally, by splenectomy. In reviewing the management of this patient several points of practical importance have emerged; they are reported here in the hope that this experience may be of value in the future conduct of such cases.

Case Report

A schoolteacher aged 63 was admitted to hospital on May 1, 1951, with severe anaemia. There was no family

history of jaundice or anaemia. In 1942 he became jaundiced because of gall-stones, and cholecystectomy was performed. The nature of the stones is not known. A year later, when in hospital with a spontaneous pneumothorax, his haemoglobin was 82% and red cells 5,000,000 per c.mm. In 1947 he became anaemic, and on June 19 of that year his haemoglobin was 40%, red cells 1,500,000 per c.mm., and colour index 1.3. A blood film showed "megalocytosis," and pernicious anaemia was diagnosed. He was given liver injections, and felt well until early in 1951, when he again became anaemic, despite treatment with liver and vitamin B₁₂.

On admission he was pale and slightly jaundiced. The liver edge was palpable, and the tip of the spleen could be felt. Blood examination showed: haemoglobin, 34%; red cells, 1,090,000 per c.mm.; colour index, 1.6; reticulocytes, 16%; white cells, 10,300 per c.mm. The differential white-cell count was within normal limits. There was macrocytosis and polychromasia of the red cells. Examination of the sternal marrow showed normoblastic hyperplasia.

Autoagglutination of the blood was noted. A direct Coombs test was positive. Autohaemagglutinins were present in a titre of 64 at refrigerator temperature, 8 at room temperature, and 2 at body temperature. The patient's blood was Group O Rh-positive. Red-cell fragility was within normal limits. Serum bilirubin was 2.2 mg. per 100 ml. There was a positive indirect van den Bergh reaction. The urine contained a trace of albumin and increased urobilinogen. Stool benzidine tests were negative. A fractional test meal showed a histamine-fast achlorhydria. Thymol turbidity was 2.5 units and plasma proteins 7.6 g. (albumin/globulin ratio 1.25:1). Serum alkaline phosphatase was 75 units (King-Armstrong), and E.S.R. (Westergren) 150 mm. in the first hour.

On May 8 the haemoglobin was 32%. On the 10th a transfusion of Group O blood was started, but was discontinued because of a severe febrile reaction after a third of a pint (190 ml.) of blood had been given. On the 12th the patient was given 25 mg. of A.C.T.H. intramuscularly, six-hourly, and this was continued for three days. There was no apparent effect on the disease (Fig. 1) or on the eosinophil count even when the dose was increased to 40 mg. six-hourly. Three pints (1,700 ml.) of blood was transfused uneventfully on May 18. The haemoglobin level continued to fall, and on May 25 a further five pints (2,740 ml.) of blood was given. The patient was so ill that a proper interval for the observation of the effects of the transfusion could not be allowed, and 300 mg. of cortisone was given on May 27, 200 mg. on the next two days, and 100 mg. on the following four days. Signs of haemolysis diminished. The E.S.R. fell, autoagglutination of the blood became much less evident, and the haemoglobin level rose (Fig. 1). The improvement continued until the dose of cortisone was reduced to 25 mg. daily, when the E.S.R. rose and signs of haemolysis increased.

A second course of cortisone was started on June 19, and this also produced improvement, but less than had followed the first course. Again, as the dose of cortisone was reduced to 25 mg. daily, the E.S.R. rose, autoagglutination of the blood became more evident, signs of haemolysis increased, and the haemoglobin level fell. The dose of cortisone was increased a third time to 300 mg. daily, with even less effect, and, although the daily intake was maintained above 50 mg. (Fig. 2), the haemoglobin fell steadily until splenectomy was performed by Mr. S. G. Davidson on July 27. On the two days following operation autoagglutination was virtually absent, but reappeared thereafter. Signs of haemolysis diminished and the haemoglobin rose steadily. On August 8 the wound burst, and there was prolonged delay in its healing. Cortisone was discontinued on August 28, and the haemoglobin fell slightly after this. The E.S.R. rose again. Autoagglutination of the blood

FIG. 1

FIG. 2

was still evident. On September 8 there was an arterial haemorrhage from the operation wound and the patient was critically ill for several days. A week later the haemoglobin began to rise again and his progress was uneventful from that time. In early November his haemoglobin was 80%, his wound had healed, and he was well enough to walk a short distance. The E.S.R. was then 80 mm. in one hour. He has continued well up to the time of writing. Autoagglutination of the blood was still present, but was slight in degree. The E.S.R. has gradually decreased to 18 mm. in one hour.

Comment

The failure of A.C.T.H. to influence the haemolytic process in this case is of some interest. Despite the relatively large dose administered (160 mg. daily), there was no adrenal response, as judged by eosinophil counts. It must be presumed that this patient's adrenal glands were incapable of responding to even this degree of stimulation, since 25 mg. of the same batch of A.C.T.H. subse-

quently gave a positive Thorn test in another patient.

Cortisone initially produced dramatic improvement, reducing haemolysis and autoagglutination, and causing a fall in the sedimentation rate. It is of great interest, however, to note that subsequent courses of the hormone had progressively less effect. In retrospect, it would clearly have been wiser to have taken advantage of the first remission produced by cortisone to remove the spleen, since the operation had eventually to be performed as a matter of desperate expediency. It should also be pointed out that this patient's operation wound was manifestly slow in healing, and the bursting of the wound came near to being a fatal disaster. These complications may well have been due to the prolonged administration of cortisone. Howes *et al.* (1950) and Bangham (1951) have shown experimentally that cortisone causes delay in healing and readiness to rupture in surgical wounds. Thus, although the action of cortisone was initially life-saving, the continuation of the drug may have added materially to the danger of splenectomy when the operation was eventually undertaken.

Summary

A case of idiopathic acquired anaemia treated with A.C.T.H., cortisone, and splenectomy is described.

I wish to thank Dr. R. J. Duthie for permission to publish this case. I am indebted to Dr. H. N. Robson for much helpful advice in the management and presentation.

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The International Diabetes Federation recently published the report of its first congress, held at Leyden on July 7-12, 1952. The report includes the inaugural address by Professor C. H. Best (honorary president of the Federation) and abstracts of some 33 papers read at the congress with indications, when possible, where they have been or will be published *in extenso*. Matters discussed by the council of the Federation included proposals for a study of the geographical distribution of diabetes, individual social help for diabetics, hostels for diabetic children, insurance against risks of diabetic coma, and driving licences for diabetics.