59 EVALUATION OF THE ADRENAL RESPONSE AFTER ACTH STIMULATION IN CHILDREN WHO RECOVERED FROM SEVERE MENINGOCOCCAL SEPTICEMIA.

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Plasma Cortisol levels were determined by C.P.B. before and after the I.M. administration of 0,25 mgr. of ACTH (Nuvacthen in 22 children who had been previously admitted in our I.C.U. in severe shock from Meningococcal Septicemia. These values were compared with those of 23 normal children as controls. This test provides good discrimination between normal children and those with primary adrenal insuficiency. The increments in two cases of cronic primary adrenal insuficiency, in cortisol values were 0 and 1 ug % ml.

The mean values and S.D. of the cortisol basal levels found in children after recovery were 12,2 ug % ml. ± 4,6 and for the normal children 15,7 ug % ml. ± 3,9. This difference is statisticaly significant (Student's test) ($P < 0,02$)

The plasma cortisol values after 30' minutes ACTH administration showed 29,8 ug % ml. ± 5,3 for normal children and 24,6 ug % ml. ± 5,1 for the children after recovered. This difference is statisticaly significant ($P < 0,01$).

The increments in both groups were 14,1 ug % ml. ± 4,8; and 12,3 ug % ml. ± 4,3. There is not significant difference ($P > 0,1$). It is established from this study that there are not differences in adrenal response between both groups as measured with this " short test "

60 THE EXCRETION OF INDIVIDUAL ADRENOCORTICAL STEROIDS IN OBESE CHILDREN.

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13 individual adrenal corticosteroids and androgens have been assayed by paper chromatography in 24 hr urine samples in 20 obese children (aged from 7 mo to 16 yr 3 mo). The children exceeded the mean weight for their age, height, sex by 23% - 98% In comparison with normal children there was a significant increase in the 24 hr excretion of 17 OHCS ($p < 0.001$) and α-ketolic cortisol metabolites ($p < 0.001$). Corrected for surface area this difference in excretion persisted ($p < 0.05$) but when corrected for body weight the results for the obese group were not significantly different from those of the normal children. The 24 hr excretion of the α-ketolic metabolites of corticosterone was significantly greater than that of the normal children ($p < 0.05$) but not when the results were corrected for body weight. Qualitatively the excretion of the individual corticosteroids in the obese children was similar to that of the normal children. Though corticosteroid excretion is related to body weight it is controlled by calorie intake. Hyperexcretors, those with a persisting increase in corticosteroid excretion when corrected for body weight, may include those with a grossly excessive calorie intake who are rapidly gaining weight. Compared with normal children, there was a significant increase in excretion of the 17OS ($p < 0.05$) and the 11-deoxygenated-17-oxosteroids ($p < 0.01$). This increase was particularly apparent in prepubertal children aged 8 to 10 yr. In obese children elevated levels of adrenal androgens in plasma might stimulate earlier maturation of the hypothalamic centre

61 COMBINED MINERALCORTICOID - CORTISONE VERSUS CORTISONE TREATMENT IN CONGENITAL ADRENAL HYPERPLASIA

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Growth was studied in 13 patients with the salt losing form of congenital adrenal hyperplasia. Present height for chronological age and for bone age at mean age 7.2 years (range 1.1 - 16.4 years) is -0.12 SD ± 1.16 and -0.16 SD ± 0.62.

In seven patients treated with cortisone acetate (C) and NaCl alone 9 fluorohydrocortisone (F) was instituted. C doses could then be reduced to mean 21 ± 5 from 28 ± 9 mg/m^2 and day with equal or better control as measured by urinary pregnanetriol excretion. These patients also showed a better growth with a mean height gain of 0.48 SD-scores after 1.5 years of treatment. Bone age advancement during this period was 0.9 ± 0.5 years/year.

The increased height velocity and good metabolic control during combined F and C treatment suggests that this regime is superior to the conventional longterm treatment with C and NaCl alone.

Values are means ± standard deviation.

62 ARE THE "KETOTIC HYPOGLYCEMIA" AND THE IDIOPATHIC HYPOGLYCEMIA ASSOCIATED WITH IMPAIRED EPINEPHRINE RELEASE (ZETTERSROM) THE SAME DISEASE?

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Clinical features of "ketotic hypoglycemia" and of idiopathic hypoglycemia of the ZETTERSTROM-type are almost identical. The question is, whether or not this two "types" of hypoglycemia can be seperated from each other. In 7 infants, suffering from spontaneous hypoglycemic attacks, both a ketogenic diet and a quantitation of urinary epinephrine (EPI) during an insulin tolerance test (ITT) were performed. Hyperinsulinism was excluded by a normal tolbutamid test in all 7 infants. During the ketogenic diet 5 of the 7 infants exhibited a critical drop in plasma glucose (below 25 mg%). The rise of EPI during ITT was absent or lowered in 4 of these 5 infants. In the 2 infants without critical drop in plasma glucose during a ketogenic diet the reaction of the adrenal medulla was controversial: the rise of EPI was absent in one child and very high in the other.

The data suggest, that "ketotic hypoglycemia" and thehypoglycemia with reduced epinephrine response to fall of plasma glucose are not two different types of infantile hypoglycemia, since many patients fullfill the criteria of both "types" of hypoglycemia.

63 PLASMA GROWTH HORMONE LEVELS IN GIRLS WITH ADOLESCENT IDIOPATHIC SCOLIOSIS.

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Girls with idiopathic scoliosis are taller and thinner than comparable nonscoliotic controls. The difference may be related to the growth hormone (GH) and for this reason GH was determined in plasma by double antibody radioimmunoassay under the following conditions: 1. insulin hypoglycemia, 2. glucose tolerance test, 3. exercise. After overnight fasting and after at least 1 hour of rest the basal GH level was 9.8±11.1(±SD)ng/ml in the scoliotic girls (n=48) and 2.2± 1.1ng/ml in the controls (n=15). The difference is significant. In the insulin hypoglycemia test the peak GH value was 33.2±19.1ng/ml in the scoliotic girls (n=27) and 20.8±8.3ng/ml in the controls (n=8). This difference is, however, not significant. In the exercise test the maximal value was observed at different times after the start of the test: at 20 minutes in the scoliotic girls (n=14, GH 17.3 ±11.8ng/ml) and at 40 minutes in the controls (n=9, GH 16.0±6.6ng/ml). In the glucose tolerance test the GH levels was suppressed in both groups but the mean GH levels tended to be higher during the first 120 minutes of the test in the scoliotic girls. The observed differences in the growth hormone response during the various tests, including statistically significantly higher basal values, could indicate an increased GH secretion in idiopathic scoliosis.