Both methods should be applicable to plasma, but Stabler and Siegel's method is preferable because no lyophilization is used and because the fluorescamine adduct is much more stable than the o-phthalaldehyde adduct.

References

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Screening of Newborns for Hypothyroidism

To the Editor:

Since 1979, every newborn at my hospital has been screened for hypothyroidism by determining the concentration of thyrotropin in the serum. The mother's serum is also assayed, concurrently. These determinations in duplicate have been performed on blood sampled on the fifth day after delivery, by a double-antibody (sheep and rabbit origin) radioimmunoassay, adapted for the influence of antibodies in the blood sample that result from allergy to rabbit antigen by adding rabbit immunoglobulin to the reagent.

About 3200 infants and their mothers have been studied, with two biochemically clear, clinically unnoticed cases of hypothyroidism being seen and early therapy given, leading to normalization.

A third case showed, on screening, biochemical signs of thyroid insufficiency in both mother and child. The infant had normal values for serum thyroxin and serum triiodothyronine. The mother was carefully examined (case history, serum hormone status, radioiodine test, thyroliberin-stimulating test) and it was found she had been unwillingly infertile for at least six years, and had been examined six years earlier gyneco-endocrinologically, with no explanation for the infertility being found at that time. Her slight hypothyroidism was treated by thyroid hormone substitution, which normalized the biochemical signs of hypothyroidism. One year after that she became pregnant again.

Three other infants showed, on screening, biochemical signs of slight underfunction of the thyroid, but on carefully following the thyroid function, without therapy, a normalization was noticed.

In two of these three cases, high values for serum thyrotropin were found for the mothers, which later became normal without treatment.

I conclude that (a) there are geographic differences in the prevalence of hypothyroidism in the newborn, which should influence decisions on starting and organizing biochemical screening for this disorder. (b) At the time of screening, both mother and infant should be examined. (c) A penetration of thyrotropin from mother to fetus through the fetoplacental barrier could explain high serum thyrotropin values in the newborn. (d) Immature hypothymo-thyroid feedback can be self-regulating, and this should be considered before starting substitution therapy.

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Catecholamines in the Early Dumping Syndrome

To the Editor:

Dumping syndrome, a condition seen in some postgastrectomy patients, is characterized by two phases. The early phase comprises episodes of flushing, dizziness, weakness, palpitations, diarrhea, usually within 30 to 60 min after meals or an oral glucose load. The late phase consists of symptoms of hypoglycemia (nervousness, hunger, weakness) 2 to 5 h after oral alimentation. Kinins and serotonin have been causally implicated in early dumping syndrome (1). Although some of the symptoms are suggestive of excessive activity of the sympathetic nervous system, the role of catecholamines, if any, in this early phase is unclear. We report a correlation of changes in plasma norepinephrine and epinephrine concentrations with symptoms during an oral glucose tolerance test (OGTT) performed as part of the diagnostic evaluation of such a patient.

Case report. A 57-year-old man underwent a truncal vagotomy and Jaboulay gastroduodenostomy with enteral isoperistaltic gastrojejunostomy four years before admission. For three months before admission, he had experienced episodic dizziness, weakness, facial flushing, and diaphoresis, usually 30 to 60 min after meals. Multiple daily bowel movements and a 8.2-kg weight loss were also noted. Treatment with anticholinergic agents and multiple small, high-protein, low-carbohydrate meals was ineffective.

Results of the physical examination were unremarkable, except for moderate generalized wasting. Routine laboratory data were normal. An extensive work-up was negative except for decreased serum carotene and cholesterol, increased fecal fat, and rapid small-bowel transit time.

Serum glucose was measured by the glucose oxidase method with a Beckman glucose analyzer (Beckman Instruments, Fullerton, CA 92634). Catecholamines were measured by radioenzymatic assay (2, 3) (courtesy of Dr. Ira Rosenthal, Department of Pediatrics, University of Illinois Hospital, Chicago, IL).

Results. Changes in serum glucose, plasma catecholamines, and symptoms during 4-h OGTT are shown in Table 1. At 90 min after glucose administration, hyperglycemia, dizziness, abdominal cramps, and diarrhea were noted, but the pulse was unchanged from baseline. No marked change in catecholamines was observed. These symptoms subsided by 120 min, with persistent hyperglycemia and an increase in norepinephrine. Hypoglycemia was present at 150 min; by 180 min, catecholamine concentrations were increased three- to fivefold from baseline values, accompanied by tremulousness and hunger. By 210 min, symptoms and hypoglycemia had resolved.

Plasma norepinephrine reportedly (4) increases significantly during an OGTT in normal subjects, with older subjects (mean age: 72.9 years) reaching a peak concentration of 372 ng/L at 120 min, when plasma glucose was approximately 1300 mg/L. However, these patients remained asymptomatic and never became hypoglycemic during the 180-min test. Similarly, plasma catecholamines were significantly increased in normal subjects 3 min after a 20-g pulse of intravenous glucose (5). On the other hand, a significant increase in plasma norepinephrine, but not epinephrine, occurred during an intravenous insulin-induced precipitous decline in blood glucose from hyperglycemic to euglycemic concentrations in diabetic subjects (6), whereas a parallel change in these catecholamines was noted during a moderate decrease in blood glucose within the euglycemic range in normal subjects (7). Such changes were not noted in the present study, there being no marked increase in catecholamines before the onset of hypoglycemia.

During a test meal no differences in plasma epinephrine and norepinephrine were found between two patients with the dumping syndrome and three pa-