METABOLIC DISORDERS

CONGENITAL GLYCOSYLATION TYPE Ic DISORDER

Clinical and biochemical characteristics of congenital disorder of glycosylation type Ic (CDG-Ic) are reported in 8 patients studied at Heinrich-Heine University Dusseldorf, Germany; University of Leuven, Belgium; University of Zurich, Switzerland; University Hospital Nijmegen; Sophia Children's Hospital, Rotterdam; and Ignatius Hospital, Breda, The Netherlands. All children had been referred for neurologic examination in the first 2 years of life because of developmental delay, muscular hypotonia, and/or epilepsy. Inverted nipples, abnormal fat distribution, and cerebellar hypoplasia, findings reported in CDG-type Ia cases, were not present. The diagnosis of CDG was established between 4 months and 8 years of age by serum transferrin isoelectric focusing pattern. Patients with CDG-Ic have a milder phenotype than those reported with CDG-Ia. All the cases of CDG-Ic were homozygous for the A333V mutation in the a-1,3 glucosyltransferase gene. (Grunewald S, Imbach T, Huijben K et al. Clinical and biochemical characteristics of congenital disorder of glycosylation type Ic, the first recognized endoplasmic reticulum defect in N-glycan synthesis. Ann Neurol June 2000;47:776-781). (Respond: Dr RA Wevers, University Hospital Nijmegen, Laboratory of Pediatrics and Neurology, Institute of Neurology, PO Box 9101, NL-6500 HB Nijmegen, The Netherlands).

COMMENT. Congenital disorders of glycosylation (CDGs) were formerly known as carbohydrate-deficient glycoprotein syndrome. Diagnosis is established by testing for the isoelectric focusing (IEF) pattern of serum transferrin. Developmental delay, muscular hypotonia, and epilepsy are the common neurologic manifestations of CDG-Ic. Additional characteristics of CDG-Ia include cerebellar hypoplasia, retinitis pigmentosa, abnormal fat distribution, inverted nipples, hepatomegaly, hypoalbuminemia, coagulopathy (also in CDG-Ic), transaminemia, and tubular proteinuria.

MITOCHONDRIAL NEUROGASTROINTESTINAL ENCEPHALOPATHY

The syndrome of mitochondrial neurogastrointestinal encephalomyopathy (MNGIE) was identified in 21 probands and 35 patients studied at Columbia University College of Physicians and Surgeons, New York; Northwestern University School of Medicine, Chicago; and other centers in the USA, Greece, UK, Canada, Belgium, Portugal, Switzerland, Japan, Italy, and Israel. The most prominent and debilitating symptom is gastrointestinal dysmotility, with decreased small intestine motility, delayed gastric emptying, and recurrent diarrhea, borborygmi, and intestinal pseudo-obstruction. Patients usually die in early adulthood (mean 38 years; range, 25-58 years). Neurologic manifestations included peripheral neuropathy, ptosis, ophthalmoparesis, areflexia, hearing loss, and infrequent pigmentary retinopathy and mental retardation. Homozygous or compound heterozygous thymidine phosphorylase mutations were present in all patients examined. Severe reduction of leukocyte thymidine phosphorylase activity is diagnostic. (Nishino I, Spinazzola A, Papadimitriou A et al. Mitochondrial neurogastrointestinal encephalomyopathy: an autosomal recessive disorder due to thymidine phosphorylase mutations. Ann Neurol June 2000;47:792-800). (Respond: Dr Hirano, Department of Neurology, Columbia University College of Physicians and Surgeons, P&S 4-443, 630 West 168th Street, New York, NY 10032).