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LETTERS TO THE EDITOR

WOLMAN DISEASE: SUGGESTIONS FOR EFFECTIVE TREATMENT

To the Editor:

Wolman disease is a relatively rare genetically-determined metabolic disease caused by lack of acid esterase-lipase. The disease is characterized by storage of neutral lipids (triglycerides and cholesterol esters) in the reticulo-endothelial system and other cells and diffuse subcapsular calcifications in the adrenals (producing a characteristic X-ray appearance). In its classical form, it results in death at around the age of 3-4 months. It is remarkable that the cells devoid of acid lipolytic activity (in their lysosomes) are capable of neutral lipolysis of the same substrates in another cellular compartment. In fact, Salvayre et al (*Eur J Biochem* 170: 453, 1987) have shown, in a tissue culture study, that only lipids of extracellular origin (those which are normally catabolized in lysosomes) remain undergradated in these cells.

My own autopsy observations (cf. Huber A, Klein D (eds). In *Neurogenetics and Neuroophthalmology,* 1981, pp. 325-332, and Pediatrics 83:1074, 1989) indicated that the organs most severely affected by lipid deposition were the small intestine and liver, which suggested that in the infants most of the damage was due to feeding with milk and other neutral fat-containing materials. The major symptomatology was also centered in the intestinal tract.

These data led me to suggest a dietary regime (as described below) for treating these infants. I believe that my suggestion does not pose any ethical dilemmas. The untreated disease causes early death, so that: (a) no control series is possible, (b) any treatment proposal prolonging life is fully justifiable.

Since the disease is rather rare, the possibility of obtaining a large enough sample in order to draw valid conclusions must depend on wide international and inter-institutional cooperation.

For over a year, a female infant afflicted with Wolman disease and treated by the dietary treatment described below survived far beyond the 3-4 month predictable life span. Although otherwise normal, in time my patient developed EFA (essential fatty acid) deficiency which is now treated by an established procedure, not against dietary treatment.

This treatment consists of strict cessation of breast feeding and avoidance of foods containing fats or oils (triglycerides and cholesterol esters). Formula feeding should be as much as possible free of neutral lipids, but should contain all vitamins.

In order to avoid dermatological complications and stunted growth due to EFA deficiency, about 10 μ of 1 / 100 sunflower oil should be rubbed lightly once a day on the skin of one arm of infants with a body weight below 5 kg, while 20 - 25 μ of the solution should be applied to infants with a body weight between 5 - 10 kg (or 3 μ / body weight). The site where the oil is applied should be alternated on consecutive days between arms, forearms, thighs and legs.

At present, it is not known whether percutaneous administration of EFA should continue uninterruptedly or if 3-4 weeks of treatment should be followed by an intermission of one or more weeks. It is proposed that this point should be tested in different cases.

In order to be able to learn about the best treatment modalities from a sizable group of patients, it is suggested that treatment of patients and its effects be reported to me every 3-6 months. A report in the name of all participants (after consultation, of course) will be published in due time. Alternately, pediatricians can combine their efforts and results and publish them independently. In addition, I would be grateful for any information which could be provided about cases of this disease, which information will be considered confidential.

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