LIPOPROTEIN X AND ITS DIAGNOSTICAL VALUE IN PATIENTS WITH CHOLESTASIS

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The early recognition of jaundice type remains still an unsolved problem. The differentiation between cholestatic and other icterus forms as well as between intra- and extrahepatic cholestasis presents one rather difficult and complicated task in everyday clinical practice. This fact warrants the extended clinical and experimental investigations as well as the recent introduction of a number of laboratory tests.

Cholestasis is accompanied by various metabolic abnormalities. The disturbances of lipid metabolism are the most severe ones. Some interesting changes of the lipoprotein (LP) level — a significant beta-LP increase (up to 100 per cent) as well as a decrease till a complete alpha-LP absence can be found out.

In 1969 Seidel and Alauporic (cited after 2, 3) described a pathological LP occurring in the plasma during cholestasis which they called LP-X. Its relative density is low (1,006—1,063 g/ml) but LP-X is quite different from this normal class of low-density lipoproteins (LDL) (1, 2, 3, 8, 9, 11). According to its composition LP-X differs also from other normal LP classes. It is rich in phospholipids (mainly lecithin) and more than 90 per cent of its cholesterol is non-esterified. It contains traces of triglycerides and a few of bile acids (3 per cent) only. The unsaturated fatty acids contents of its phospholipids is much smaller than that of normal LP. LP-X protein part which is mainly presented by both albumin (40 per cent) and apoprotein C is about 3 times smaller than that of normal LDL (2, 3, 4, 5, 7, 10).

The considerable differential-diagnostic significance of LP-X in jaundice is due to its very high cholestatic specificity. It is relatively early positive in cholestasis patients' serum (2, 3). It can be established in both intra- and extrahepatic cholestasis and possesses, therefore, no differential-diagnostic value in these cholestatic forms (12, 13). On the other hand, extrahepatic cholestasis can induce a secondary parenchymatous dystrophy (10).

The purpose of the present study is the investigation of the diagnostic value of LP-X in some cholestasis diseases.

Material and methods

Serum LP-X was determined in 108 patients with 8 various cholestasis diseases. There were 72 males aged between 35 and 83 years, mean age 64 years, and 36 females aged between 19 and 78 years, mean age 57 years. The primary disease which had caused cholestasis or even cholestasis syndrome was established by using routine clinico-laboratory tests as well as some contemporary instrumental-apparatus methods such as echography, scintigraphy, laparoscopy, endoscopic retrograde cholecystopancreatography, percutaneous transhepatic cholangio-

graphy, laparotomy, etc. LP-X was determined by using an agar electrophoretic semiquantitative Seidel's method followed by LP precipitation with magnesium heparin solution.

Results and discussion

The results received are given on table 1. Most patients are with cholelithiasis-choledochlithiasis. LP-X appears in 92,85 per cent of them. However, it is absent in 3 patients probably due to low-gradual hyperbilirubinaemia (serum bilirubin level up to 3 mg %). In two patients (10 per cent) with pancreas head cancer LP-X was also absent although there was a severe cholestasis — in the first patient serum bilirubin level was 16 mg % and in the second one even 33 mg %.

Table 1

Cholestatic diseases and LP-X presence in different diseases

Disease	n	LP-X +	LP-X −	% positive
1. Cholelithiasis — Choledocholithiasis	42	39	3	92,85
2. Pancreas head cancer	20	18	2	90,00
3. Liver cancer	15	14	1	93,30
4. Liver cirrhosis with intrahepatic cholestasis	16	14	2	87,50
5. Chronic active hepatitis — cholestatic form	6	6	—	100,00
6. Acute alcoholic hepatitis	6	5	1	83,30
7. Recidivans jaundice of pregnancy	1	1	—	100,00
8. Acute viral hepatitis	2	2	—	100,00
Total	108	99	9	91,67

The patients with liver cirrhosis had well-expressed clinico-chemical cholestasis indexes. That's why LP-X was observed in a relatively high percentage with these patients. It is noteworthy that LP-X was present in all the patients with cholestatic form of chronic active hepatitis. The acute alcoholic hepatitis is manifested on the ground of preceeding chronic alcoholic cholestatic hepatopathy. LP-X presence was estimated in 100 per cent of the patients with recidive jaundice of pregnancy and with cholestatic form of an acute viral hepatitis. LP-X was found out in a total of 91,67 per cent of cholestasis patients independently on the causative disease.

We can conclude that LP-X detection is a promising method in cholestasis diagnostics although it does not make it possibly to estimate the cause and character of cholestasis proper. The differential diagnosis between intra-and extrahepatic cholestasis is a difficult problem which could not be solved by using LP-X, indeed.

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ЛИПОПРОТЕИН-Х И ЕГО ЗНАЧЕНИЕ ДЛЯ ЛЕЧЕНИЯ БОЛЬНЫХ ХОЛЕСТАЗОМ

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РЕЗЮМЕ

Изучена диагностическая ценность ЛП-Х при восьми заболеваниях, протекающих с холестазом у 108 больных. Независимо от основного заболевания, почти у всех больных (в 91 % случаев) было установлено наличие ЛП-Х.

Установление ЛП-Х является надежным методом диагностики холестаза, независимо от того, что этот метод не дает возможность судить о причине и характере холестаза. Дифференциальный диагноз интра- и экстрагепатального холестаза не удается легко.

Авторами сделан вывод, что для определения типа холестаза ЛП-Х не имеет значения.