Abstract


Progesterone metabolites and bile acids in serum of patients with intrahepatic cholestasis of pregnancy: effect of ursodeoxycholic acid therapy.

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OBJECTIVE: The concentrations in serum of sulfated metabolites of progesterone are known to be elevated in patients with intrahepatic cholestasis of pregnancy (ICP).

METHODS: The profiles of these metabolites and conjugated bile acids were analyzed in serum from 11 patients with ICP before and during administration of ursodeoxycholic acid (UDCA) (8 patients) or placebo (3 patients).

RESULTS: The clinical condition of 7 of the patients given UDCA improved markedly, and 1 patient given placebo had a spontaneous remission of the disease. The total concentration of conjugated bile acids in the 11 patients was 25 +/- 6 micromol/L (mean +/- SEM) and decreased to 6.3 +/- 3.5 micromol/L in the 7 patients responding to treatment with UDCA. The level of 7alpha-hydroxy-4-cholesten-3-one was significantly lower (7.2 +/- 2.2 ng/mL) in patients with ICP than in healthy pregnancy (18 +/- 4.6 ng/mL) (P < .05). The concentrations of 5alpha-pregnane-3alpha,20alpha-diol mono- and disulfates decreased by 52% +/- 7.9% and 68% +/- 5.5%, respectively, in the patients responding to treatment. Similar decreases were observed for the mono- and disulfates of 5alpha-pregnane-3alpha,20alpha,21-triols and 5beta-pregnane-3alpha,20alpha-diol. The disulfate of 5alpha-pregnane-3beta,20alpha-diol showed a smaller decrease, while glucuronidated steroids were not affected. The 3alpha-/3beta-hydroxysteroid ratio and di-/monosulfate ratio decreased significantly during UDCA. The magnitudes of the changes of bile acid and steroid concentrations during UDCA were not correlated to each other.

CONCLUSION: The results suggest that UDCA stimulates the biliary excretion of steroids with a 3alpha-sulfoxy group and disulfates. This effect seems to be independent of the effect on bile acid excretion, indicating the use of different transport proteins. The possibility of an effect of UDCA on the formation of the steroid sulfates cannot be excluded.

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