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Characteristics of the functional state of the liver in postpartum women undergoing preeclampsia

Abstract: The study of liver function in women undergoing preeclampsia. A clinical and laboratory study. The study included 60 patients in the postpartum period. Of these, the main group consisted of 40 women had undergone preeclampsia varying severity. In the history of viral and autoimmune liver disease were excluded. In biochemical studies revealed liver cell deficiency syndrome. In women who have had varying degrees of severity of PE, noticed violations of the functional activity of the liver, manifested cytolysis, hepatocellular failure, lipid and protein metabolism, the severity of which corresponded to the severity of the disease. Change indicators promoted early onset, duration of preeclampsia.

Keywords: Preeclampsia, liver, cytolysis, biliary tract duskiness.

Preeclampsia (PE) — a disease of the whole organism, therefore, by its very nature it always has many faces [1; 4; 7; 11]. Preeclampsia often atypical (erased), and is complicated by deep disorders of the most important organs and systems [2; 5; 6; 9].

The frequency of preeclampsia according to different authors from 9 to 17% of all pregnant women; in hospitals of high risk, it is 30% or more [4; 6; 7; 10]. Currently, 70% of PE occurs in pregnant women with extra genital pathology.

During pregnancy, there is a substantial restructuring of the functions of a number of bodies, including the liver [3; 5; 7; 9]. Liver, depleting their reserve capabilities as pregnancy progresses, it becomes more vulnerable [2; 4; 5; 8]. Therefore, special attention should be necessary to pay in the development of PE. The liver is the organ with the developed capillary system in one degree or another always gets involved in a deep microcirculatory disorders and chronic tissue hypoxia [5; 6; 9; 11].

Objective: The study of the functional state of the liver in women undergoing preeclampsia.

Materials and methods

The study involved 60 patients in the postpartum period. Of these, the main group consisted of 40 women have undergone varying degrees of severity of preeclampsia. The control group consisted of 20 patients with physiological pregnancy.

In the study group surveyed identified 2 groups: 1st subgroup consisted of 20 patients who underwent mild PE, 2nd of 20 women who had undergone severe PE severity.

All the surveyed women were nulliparous. The average age of patients was 20,3 ± 2,5 years. The history of viral and autoimmune liver disease were excluded. Investigations were carried out on 5–8 th day of the postpartum period; biochemical, ultrasound examinations of the hepatobiliary system.

Results and discussion.

In the studied group of patients did not differ in age — from 18 to 36 years. Compared group were women of a similar age, fertility, and historical data.

In the study of history it noted that 36 patients of the main group had extra genital pathology. Most identified anemia: 80% — in the 2nd subgroup and 65% — in the 1 st subgroup: Metabolic syndrome: in 40.2% of women of the 1st subgroup, 2nd subgroups –60.3%; biliary tract duskiness (4.3% of cases in the 2nd subgroup and 2.1% — in the 1st subgroup).

The analysis showed the appearance of pregnancy clinic PE with 28–30 weeks in the 2nd group in the 1 st subgroup — 34 weeks or more.

Preeclampsia with the presence of a triad of symptoms (edema, proteinuria, hypertension) was noted in 38% of women, mainly in severe disease severity. PE with two all matching simptomami- hypertension and swelling — at 28.3%; hypertension and proteinuria — 23.3%; swelling and proteinuriya- 10.4%. The symptoms of preeclampsia postpartum continued until 3–4 days, mostly in patients 2nd subgroup. Patients complaints on the part of the hepatobiliary system did not show and clinical manifestations of liver disease were not.

When biochemical study revealed hepatic cell deficiency syndrome, reflecting changes in the basic functional tests of liver excretory absorptive, metabolized and synthetic functions. Hypoproteinemia was especially pronounced in the I-st and the II-th subgroup (56,4 ± 2,8 and 61,3 ± 4,0g/l) in comparison with the control group ($p < 0.05$); hypoalbuminemia in 1st 31,9 ± 4,2g/l and in the 2nd subgroup of 31,2 ± 2,4g/l ($p < 0.05$). The results made cytolysis markers; alanine amino transaminase (ALT) in I subgroup — 26,4 ± 14,7 U/L are close to the values in the control group (23,9 ± 5,4 U/l) in the 2nd subgroup 59,1 ± 16,9 U/L, ($p < 0.05$).

Thus, cytolysis syndrome is more pronounced in the subgroup II due permeabilised organelles and hepatocytes, which led to the isolation of an integral part of cells into the intercellular space and blood.

An increasing amino transaminase activity, demonstrating the genesis of hepatic hyperenzymemia, the level of which increases the severity of preeclampsia, respectively.

Lipid results were generally consistent with changes in indicators of hepatic markers. Total cholesterol in patients 1st subgroups (6,16 ± 1,12 mmol/l), considerable disturbances in virtually all patients 2nd subgroup (6,25 ± 0,67 mmol/l) compared to the control group (5 66 ± 0,8 mmol/l), ($p < 0.05$). The level of low density lipoprotein was high in the 2nd subgroup compared to the 1 st sub-groups and the control group 5,09 ± 3,09 mmol/l ($p < 0.05$). These changes are taking place against a background of significant reduction in high density lipoprotein in the studied subgroups ($p < 0.05$).

The concentration of urea in the 2nd subgroup constituted, 6,8 ± 1,3 mmol/l was at the upper limit ($p < 0.05$) compared with the control group, ie detoxification of the liver has been broken.

Thus, women who have had varying degrees of severity of PE, there is a violation of the functional activity of the liver, manifested cytolysis, hepatocellular failure, lipid, protein metabolism, the severity of which corresponds to the severity of the disease. Change indices contribute early start, long duration of pre-eclampsia.

Changes in clinical and laboratory studies describing the functions of the body, make it possible to diagnose disorders in the early stages of the disease during the postpartum period and contribute to the timely implementation of corrective therapy aimed at restoring liver function.

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