AJPMHS GLOBAL RESEARCH NETWORK

AMERICAN Journal of Pediatric Medicine and Health Sciences
Volume 02, Issue 11, 2024 ISSN (E): 2993-2149

Optimization of Prevention of Intrahepatic Cholestasis of Pregnant Women

Khusanova Durdona Tog'oymurodovna
Assistant, Samarkand State Medical University
Faculty General Medicine -1
Department of Obstetrics and Gynecology No. 3

Abstract. Discrete plasmapheresis was performed as follows: blood transfusion was performed by puncturing the ulnar vein in plastic bottles "Hemakon 500/300". After thorough mixing, the blood was placed in a Bechman refrigerated centrifuge and centrifuged at 3000 rpm for 6 minutes at 22°C. The plasma separated from the cell mass was removed using a plasma extractor. The remaining cells were diluted with 150 ml of saline and re-infused into the patient. During one session, 1-2 blood samples were taken, depending on the patient's condition, the patient's weight and the tolerance of the procedure. Plasma exfusion was carried out from 25-30% of the circulating plasma volume. Plasma replacement was performed with hydroxyethyl starch (HES 6%) preparations, crystalloid solutions in a ratio of 2:1 to the removed plasma. Administration of hyperoncotic albumin solution was performed when the albumin content in the blood was below 30 g/l. All patients were prescribed a high-protein diet. Stabilization of the blood was carried out with 100 ml of glucagon solution in each double bag. All patients were heparinized at 50 U/kg of patient weight. The treatment course consists of an average of 3-4 PA sessions with an interval of 2-4 days, depending on the clinical and laboratory parameters describing the patient's condition, laboratory parameters, etc. The average number of courses per pregnant woman was 3.6±0.7 per pregnancy. Hematological, hemostatological and biochemical indicators were determined in all patients to evaluate the effectiveness of therapy.

Key words: Medium-chain triglycerides; poor nutrition; nutritional support

Introduction

Hemostasis study: fibrinogen concentration (g/l), prothrombin index (%) according to rapid activated partial thromboplastin time were determined according to the standard method. Ma (mm) and the index of thromboelastic potential (ITP, arb.) and the value of the general indicator r+k (mm) were determined. Platelet aggregation was assessed using the photometric method of Borne (1962).

Aggregation stimulators of adenosine diphosphate solutions at a final concentration of 1x103 and collagen-aggregation reaction. A study was conducted on the composition of fibrin and fibrinogen breakdown products. Determination of soluble fibrin monomer complexes (SFMC) was performed using the protamine sulfate test. Determination of antithrombin III, protein C activity using chromogenic substrates.

Biochemical blood tests with the study of basic parameters were carried out on a Kon Ultra biochemical analyzer (Finland) using standard computer programs and reagents.

The detection of medium molecules (MM) was measured in a spectrophotometer at wavelengths of 254 and 280 nm using the screening method;

Special research methods were used in the work:

HLA typing (identification of class I antigens) was performed on peripheral blood lymphocytes using the standard "complement-dependent cytotoxicity" method.

All pregnant women underwent ultrasound examination using real-time "Aloka SSD - 680", "Siemens Elegro" (Japan) ultrasound devices. To assess the blood flow in the maternal-placental-fetal system, a Doppler study was conducted with the help of instruments and "Aloka" SSD - 2000. Fetal condition monitoring in the third trimester was performed using Toitu 8030A cardiographs (Japan).

Macroscopic, morphometric and histological methods (with staining of paraffin sections with hematoxylin and eosin) were used in the morphological analysis of the placenta, fetal membranes and umbilical cord. The weight and size of the placentas were also determined.

The following data processing methods were used in the work: x2 criterion for contingency tables, including the use of Bonferroni correction if necessary; Pearson's goodness-of-fit test to check the normality of distributions; comparative analysis of variables using the Wilcoxon-Main-Whitney test or the Stodet T-test for unrelated populations (depending on the results of the previous normality test); 10 for comparative quality

Fisher's exact test was used for signs of unrelated groups (one-tailed and two-tailed); quantitative indicators in the text and tables are presented in the form of M ± BE (where M is the arithmetic mean, BE is the standard deviation); Wilcoxon T-test for comparing two related populations (if, according to the results of the previous test for normality, the hypothesis of normal distribution is rejected); Spearman's rank correlation was used to determine the correlation analysis.

Materials and Methods

The methodology for this study on optimizing intrahepatic cholestasis prevention in pregnant women involved various clinical, biochemical, and statistical procedures. Initially, patients underwent discrete plasmapheresis, with blood samples collected and processed using centrifugation and plasma extraction techniques. The removed plasma was replaced with hydroxyethyl starch and crystalloid solutions in a specific ratio, and hyperoncotic albumin was administered as needed. Hemostatic and hematologic evaluations were conducted, measuring parameters such as fibrinogen concentration, thromboelastic potential, and platelet aggregation. Biochemical blood analysis assessed liver function and metabolic status using spectrophotometry and standard assays. Specific HLA typing was conducted to evaluate genetic predispositions associated with intrahepatic cholestasis. Furthermore, Doppler ultrasound and cardiotocography were employed to monitor maternal and fetal blood flow and fetal well-being. Morphological examination of placental tissues was also performed. For data processing, statistical tools such as Pearson's test, Wilcoxon-Mann-Whitney, and Spearman correlation analyses were utilized to assess the relationship between clinical and laboratory data. The study tracked the therapeutic impact on maternal health, fetal development, and pregnancy outcomes, analyzing the efficacy of plasmapheresis and identifying significant risk factors and correlations related to intrahepatic cholestasis in pregnancy.

Results

A retrospective analysis of archival material showed that the incidence of ICP in the total number of patients over a 6-year period ranged from 0.17 to 0.27% by year. Reproductive age

ranged from 21 to 38 years, with an average age of menarche of 12.5 ± 2.6 years. Most are multiple pregnancies 17 (68%). 1 (28%) person has a history of early spontaneous abortions; 5 patients (20%) were diagnosed with intrahepatic cholestasis in a previous pregnancy. Pelvic inflammatory diseases (chronic salpingo-oophoritis and endometritis) in 40% of cases (10), as well as cervical erosion in 36% of cases (9), 30% of women suffered from primary (18%) or secondary infertility. (12%). It should be noted that in 4 women (16%) pregnancy occurred after IVF and ET program.

The analysis of the obtained data together confirms the high frequency of common somatic diseases. As part of somatic pathology, diseases of the digestive system (chronic gastritis, cholecystitis, biliary dyskinesia, gastroduodenitis) significantly prevailed, their share was 60% (15 pregnant women). The second most common diseases are diseases of the urinary system (chronic cystitis, chronic pyelonephritis) and endocrine diseases in 36% of cases (9 pregnant women).

Based on the statistical processing of the data, important risk factors for the development of ICP were identified: most often in women pregnant for the second time (68%); the presence of gastrointestinal diseases (60%); presence of intrahepatic cholestasis in previous pregnancy (20%); pregnancy after ovulation induction or ART (16%).

A correlation analysis using the Spearman method showed a significant difference between the presence of gastrointestinal tract diseases in multiple pregnant women ($p<0.001$) and the development of recurrent cholestasis in pregnant women with gastrointestinal tract diseases ($p<0.05$). 'a direct correlation was found.

When analyzing patients in a prospective study, intrahepatic cholestasis of pregnancy occurred in young women aged 20 to 35 years - 74.3% in group I and 80.6% in group II, respectively. Most intrahepatic cholestasis of pregnancy occurs in primiparous women: 70.4% in the main group (19) and 86% in the comparison group (31). In the main group, 5 women (18.5%) had a high percentage of intrahepatic cholestasis in previous pregnancies. It is important to note the very high percentage of induced pregnancies that occurred after in vitro fertilization and embryo transfer (IVF and ET): 38.9% (14) in the comparison group and 37% (10) in the main group.

Among gynecological diseases, the most common and frequently identified pathology was cervical erosion - in 18 (67%) pregnant women of the main group and 16 (44.5%) of the comparison group; pelvic inflammatory disease - 15 (55.5%) and 31 (86.1%) pregnant women in the main and comparison groups, respectively.

Among the extragenital diseases in the examined pregnant women, gastrointestinal tract diseases prevailed in 59.3% of pregnant women in the main group and in 22.2% of pregnant women in the comparison group. Diseases of the circulatory system and urinary system occurred with the same frequency.

When studying the status of the HLA-class I system in pregnant women with intrahepatic cholestasis, attention is paid to the high frequency of alleles at the B8 locus - 40%, while only the B8 allele was detected in the control group. at 13.3%. As shown in previous studies [Gichev Yu.P., 1989], the B8 locus allele is often found in chronic active liver lesions of unknown etiology. In combination with other predisposing factors, matches at the B8 allele locus may indicate the possibility of developing intrahepatic cholestasis in pregnancy (Figure 1).

The results of the analysis of this pregnancy process showed that: toxicosis in the first half of pregnancy was noted in 16 (59.1%) pregnant women in the main group, in 20 (55.6%) of the comparison group. The risk of miscarriage was recorded in 22 (81.5%) pregnant women in the

main group and in 29 (81.0%) pregnant women in the comparison group. Signs of placental insufficiency were detected in only 1 (3.7%) pregnant woman in the main group and in 10 (28%) pregnant women in the comparison group ($p < 0.05$). Fetal development delay syndrome was detected in 1 (3.7%) pregnant women in the main group and in 6 (17.0%) women in the comparison group.

Indications for therapeutic plasmapheresis in pregnant women with intrahepatic cholestasis: persistent from traditional treatment methods, especially in severe and moderate forms of ICP (de Ritis coefficient - AST/ALT ratio less than 0.7; severe itching, increased ALP level) lack of clinical effect. , liver transaminases 3-4 times), the presence of allergic reactions to the drugs used; signs of intoxication; the presence of disseminated intravascular coagulation syndrome according to hemostasiogram. Contraindications to plasmapheresis are: the presence of hypocoagulation in the hemostasis system, severe anemia, decompensation of the cardiovascular system, blood diseases, cholelithiasis and urolithiasis.

A combined decrease in fetoplacental and uteroplacental blood flow was observed in 3 pregnant women (11.1%) before the start of therapeutic plasmapheresis. In the comparison group, such disorders were noted in 7 pregnant women (19.4%), of which a decrease in uteroplacental blood flow while maintaining feto-placental blood flow was observed in 3 pregnant women (8.3%), 4 pregnant women (11.1%) . %) Only a decrease in feto-placental blood flow was noted. Decreased fetal-placental blood flow after plasmapheresis in 1 woman (3.7%), increased blood flow in the middle cerebral artery of the fetus in the same pregnant woman, in the remaining pregnant women, uteroplacental and; feto-placental blood flow was within normal limits. After completion of treatment in the comparison group, feto-placental and uteroplacental diseases were found in 10 pregnant women (28%) ($p < 0.05$).

According to antenatal cardiotocography data, 6 pregnant women (22.2%) in the main group showed early signs of fetal intrauterine distress (FSI) from 1.4 to 1.6 and an average of 1.49 ± 0.46 ; PSP averaged 1.52 ± 0.62 in the comparison group in 5 pregnant women (13.9%). After plasmapheresis, PSP levels decreased and averaged 0.75 ± 0.13. In the comparison group, after treatment, 1 pregnant woman (2.8%) retained the initial signs of fetal distress, PSP was 1.52, and in 1 case (2.8%) severe fetal distress was noted - PSP 3 was .5.

Analysis of the dynamics of the main symptoms of the disease during different types of therapy showed that after a course of treatment using plasmapheresis and hydroxyethyl starch solutions (Refortan 6%), itching of the skin disappeared in all pregnant women of the main group, on the contrary. 8 pregnant women (22.2%) persisted ($p<0.01$) to the comparison group. Excoriations in places where itching was localized were compared to 15 (42%) pregnant women, in contrast to pregnant women in the main group - 2 (7.4%) ($p < 0.01$). Subjective staining of the sclera was preserved in 32 pregnant women (89%) in the comparison group, and in 16 pregnant women (59.3%) in the main group ($p < 0.01$). Sleep disturbance caused by skin itching was reported by 13 patients (48.2%) in group I and 31 pregnant women (86.1%) in the comparison group ($p < 0.01$). Due to the development of steatorrhea and malabsorption syndrome, the change in the color of feces remains.

The analysis of laboratory data showed that plasmapheresis (PA) therapy does not have a negative effect on the morphological composition of blood in pregnant women with intrahepatic cholestasis. On the contrary, there was no decrease in the level of hemoglobin, a significant

decrease in ESR and hematocrit was observed in pregnant women of the main group, which indicates an improvement in blood rheology in patients with ICP.

One of the indications for plasmapheresis in patients with ICP is changes in the hemostatic system, manifested in the presence of systemic hypercoagulability with the development of intravascular coagulation activation. data indicates. . The obtained results of the effect of PA in combination with infusion therapy show a clear normalizing effect on the hemostatic system in ICP. The effect of PA on the course of DIC is one of its most important clinical effects. PA cannot be replaced as a method of removing coagulation mediators and pathological products formed during the coagulation process. Under the influence of discrete PA, the parameters of plasma and platelet hemostasis stabilize, the activity of coagulation inhibitors increases, and the fibrinolytic potential of blood increases, which helps to reduce blood viscosity and improve the aggregation properties of blood cells. improve microcirculation.

A study of the composition of electrolytes (potassium and sodium) in patients with ICP did not reveal a significant decrease in their level below the physiological level as a result of PA. The study of these parameters is mandatory to prevent the occurrence of hypokalemia, which can lead to cardiovascular complications.

Conclusion

Before and as a result of biochemical blood testafter therapeutic plasmapheresis, improvement of liver function and metabolic processes was found in patients with ICP, which is a significant decrease in the level of total bilirubin, a stable level of total protein, ALP, ALT, AST, cholesterol and triglycerides. Plasmapheresis with a multicomponent effect is pathogenetically based in the treatment of pregnant women with intrahepatic cholestasis, as it allows to reduce the level of metabolites, high concentrations of liver transaminases, cholesterol, triglycerides, and bilirubin in the blood serum. removal of plasma from the bloodstream helps their distribution from tissues and organs (Table 4).

A comparative analysis of the characteristics of the labor process and the postpartum period of women in the examined groups showed that only 11 (41%) pregnant women in the main group gave birth early, which is 1.5 times less than in the comparison group. 19 (53%). In 11 (42.3%) pregnant women in the comparison group, the ineffectiveness of therapy characterized by increased skin itching, deterioration of the intrauterine condition of the fetus and basic biochemical indicators caused emergency delivery through the abdominal cavity. with caesarean section. It should be noted that the cesarean rate in the comparison group was 1.5 times higher than in the main group.

It should be noted the high frequency of untimely discharge of amniotic fluid in pregnant women with ICP (72.7% and 58.3% in the groups, respectively, bleeding in the early postpartum period was noted only in the comparison group - 16.7 % (2 women);). Bleeding was not observed in any patient in the main group treated with PA.

Analysis of the postpartum period showed that endometritis developed in only 1 (3.7%) case in the main group. In the comparison group, 5 (13.9%) women had postpartum complications: 4 (11.1%) women developed endometritis, for which vacuum aspiration was performed.

References

1. Andryev S. et al. Experience with the use of memantine in the treatment of cognitive disorders //Science and innovation. – 2023. – T. 2. – №. D11. – C. 282-288.

2. Antsiborov S. et al. Association of dopaminergic receptors of peripheral blood lymphocytes with a risk of developing antipsychotic extrapyramidal diseases //Science and innovation. – 2023. – T. 2. – №. D11. – C. 29-35.
3. Asanova R. et al. Features of the treatment of patients with mental disorders and cardiovascular pathology //Science and innovation. – 2023. – T. 2. – №. D12. – C. 545-550.
4. Begbudiyev M. et al. Integration of psychiatric care into primary care //Science and innovation. – 2023. – T. 2. – №. D12. – C. 551-557.
5. Bo'Riyev B. et al. Features of clinical and psychopathological examination of young children //Science and innovation. – 2023. – T. 2. – №. D12. – C. 558-563.
6. Borisova Y. et al. Concomitant mental disorders and social functioning of adults with high-functioning autism/asperger syndrome //Science and innovation. – 2023. – T. 2. – №. D11. – C. 36-41.
7. Ivanovich U. A. et al. Efficacy and tolerance of pharmacotherapy with antidepressants in non-psychotic depressions in combination with chronic brain ischemia //Science and Innovation. – 2023. – T. 2. – №. 12. – C. 409-414.
8. Karshiyev Z. et al. The degree of adaptation to psychogenic effects in social life in patients with psychogenic asthma //Science and innovation. – 2023. – T. 2. – №. D11. – C. 295-302.
9. Konstantinova O. et al. Clinical and psychological characteristics of patients with alcoholism with suicidal behavior //Science and innovation. – 2023. – T. 2. – №. D11. – C. 399-404.
10. Konstantinova O. et al. Experience in the use of thiamine (vitamin B1) megadose in the treatment of korsakov-type alcoholic encephalopathy //Science and innovation. – 2023. – T. 2. – №. D12. – C. 564-570.
11. Kosolapov V. et al. Modern strategies to help children and adolescents with anorexia nervosa syndrome //Science and innovation. – 2023. – T. 2. – №. D12. – C. 571-575.
12. Lomakin S. et al. Biopsychosocial model of internet-dependent behavior. Risk factors for the formation of the internet //Science and innovation. – 2023. – T. 2. – №. D12. – C. 205-211.
13. Lomakin S. et al. Features of electroencephalographic disorders in patients with mental disorders due to brain damage or dysfunction //Science and innovation. – 2023. – T. 2. – №. D12. – C. 367-372.
14. Lomakin S. et al. Socio-demographic, personal and clinical characteristics of relatives of patients with alcoholism //Science and innovation. – 2023. – T. 2. – №. D12. – C. 278-283.
15. Lukasheva A. et al. Psychosomatic relationships in different age groups in patients with facial dermatosis //Science and innovation. – 2023. – T. 2. – №. D11. – C. 289-294.
16. Malakhov A. et al. Modern views on the treatment and rehabilitation of patients with dementia //Science and innovation. – 2023. – T. 2. – №. D12. – C. 322-329.
17. Malakhov A. et al. Problems of prevention of socially dangerous behavior by individuals with mental disorders //Science and innovation. – 2023. – T. 2. – №. D11. – C. 405-412.