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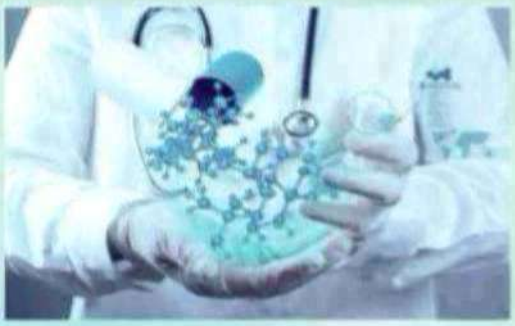

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LIVER DISORDERS ASSOCIATED WITH PREGNANCY: A RETROSPECTIVE CASE REVIEW

Dauletova M.J. https://orcid.org/0009-0006-4640-1442 e-mail: obs-gyn85@mail.ru

Republican Specialized Scientific and Practical Medical Center for Maternal and Child Health, Uzbekistan, Tashkent: Mirzo-Ulugbek St., 132-a, tel.: +998 (71) 2637818, e-mail: info@uzaig.uz

✓ ***Resume***

Pregnancy-associated liver diseases represent a significant clinical challenge due to their potential impact on maternal and fetal outcomes. This retrospective study analyzes cases of hepatic disorders in pregnant women treated at the Republican Specialized Scientific and Practical Medical Center for Maternal and Child Health between 2022 and 2024. The study includes intrahepatic cholestasis of pregnancy (ICP), HELLP syndrome, acute fatty liver of pregnancy (AFLP), and viral hepatitis. Clinical presentations, laboratory findings, diagnostic approaches, and treatment strategies were evaluated. The prevalence and distribution of liver pathologies were assessed across trimesters and correlated with maternal age, parity, and comorbidities. Outcomes such as preterm delivery, cesarean section rates, and neonatal complications were analyzed. The study highlights the importance of early recognition and multidisciplinary management to reduce adverse outcomes. Data suggest that timely intervention significantly improves prognosis in severe hepatic conditions. These findings underscore the need for standardized protocols and further prospective research in maternal hepatology.

Key words: pregnancy, liver disease, gestational cholestasis, acute fatty hepatosis, retrospective analysis, perinatal outcomes.

ЗАБОЛЕВАНИЯ ПЕЧЕНИ, АССОЦИИРОВАННЫЕ С БЕРЕМЕННОСТЬЮ: РЕТРОСПЕКТИВНЫЙ ОБЗОР КЛИНИЧЕСКИХ СЛУЧАЕВ

Даулетова М.Ж. https://orcid.org/0009-0006-4640-1442

Республиканский специализированный научно-практический медицинский центр здоровья матери и ребёнка Узбекистан г. Ташкент Ташкенте: ул. Мирзо-Улугбека, 132-а
тел: +998(71)2637818 e-mail: info@uzaig.uz

✓ ***Резюме***

Заболевания печени, ассоциированные с беременностью, представляют собой значимую клиническую проблему в связи с их потенциальным неблагоприятным влиянием на материнские и перинатальные исходы. В данном ретроспективном исследовании проанализированы случаи печёночной патологии у беременных женщин, проходивших лечение в Республиканском специализированном научно-практическом медицинском центре охраны материнства и детства в период 2022–2024 гг. В исследование включены внутрипечёночный холестаз беременных (ВХБ), HELLP-синдром, острая жировая дистрофия печени беременных (AFLP), а также вирусные гепатиты. Оценивались клинические проявления, лабораторные показатели, диагностические подходы и тактика лечения. Проанализированы распространённость и распределение печёночной патологии по триместрам беременности, а также их взаимосвязь с возрастом матери, паритетом и сопутствующими заболеваниями. Изучены такие исходы, как преждевременные роды, частота кесарева сечения и неонатальные осложнения. Полученные данные подчёркивают важность ранней диагностики и мультидисциплинарного подхода к ведению пациенток для снижения риска неблагоприятных исходов. Результаты свидетельствуют о том, что своевременное вмешательство существенно улучшает прогноз при тяжёлых формах печёночной патологии. Полученные выводы указывают на необходимость разработки стандартизированных клинических протоколов и проведения дальнейших проспективных исследований в области материнской гепатологии.

Ключевые слова: беременность, заболевания печени, гестационный холестаз, острая жировая дистрофия печени, ретроспективный анализ, перинатальные исходы.

HOMILADORLIK BILAN BOG‘LIQ JIGAR KASALLIKLARI: KLINIK HOLATLARNING RETROSPEKTIV SHARHI

Dauletova M.J. https://orcid.org/0009-0006-4640-1442

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✓ ***Rezyume***

Homiladorlik bilan bog‘liq jigar kasalliklari ona va perinatal natijalarga salbiy ta’sir ko‘rsatishi mumkinligi sababli muhim klinik muammo hisoblanadi. Ushbu retrospektiv tadqiqotda 2022–2024-yillar davomida Onalik va bolalikni muhofaza qilish bo‘yicha Respublika ixtisoslashtirilgan ilmiy-amaliy tibbiyot markazida davolangan homilador ayollarda uchragan jigar patologiyalari holatlari tahlil qilindi. Tadqiqot doirasiga homiladorlikning ichki jigar xolestazi (VXB), HELLP-sindrom, homiladorlikning o‘tkir yog‘li jigar distrofiyasi (AFLP), shuningdek virusli gepatitlar kiritildi. Klinik belgilar, laborator ko‘rsatkichlar, diagnostik yondashuvlar va davolash taktikasi baholandi. Jigar patologiyalarining homiladorlik trimestrlari bo‘yicha tarqalishi va uchrash chastotasi, shuningdek ularning onaning yoshi, pariteti va hamroh kasalliklar bilan o‘zaro bog‘liqligi tahlil qilindi. Erta tug‘ruq, kesarcha kesish chastotasi va neonatal asoratlar kabi natijalar o‘rganildi. Olingan ma’lumotlar noxush oqibatlar xavfini kamaytirishda erta tashxis qo‘yish va multidisipliner yondashuvning muhimligini ko‘rsatadi. Natijalar og‘ir jigar patologiyalari mavjud bo‘lgan holatlarda o‘z vaqtida aralashuv prognozni sezilarli darajada yaxshilashini tasdiqlaydi. Ushbu xulosalar onalik гепатологияси sohasida standartlashtirilgan klinik protokollarni ishlab chiqish va qo‘shimcha prospektiv tadqiqotlar o‘tkazish zarurligini ta’kidlaydi.

Kalit so‘zlar: homiladorlik, jigar kasalliklari, gestatsion xolestaz, o‘tkir yog‘li jigar distrofiyasi, retrospektiv tahlil, perinatal natijalar.

Relevance

Liver disorders occurring during pregnancy comprise a heterogeneous spectrum of conditions, ranging from transient and clinically mild biochemical alterations to severe, potentially life-threatening syndromes. These conditions present substantial diagnostic and therapeutic challenges, largely due to the overlap between their clinical manifestations and the normal physiological changes of pregnancy, as well as the risk of rapid progression with serious consequences for both maternal and fetal health. The most clinically significant hepatic disorders associated with pregnancy include intrahepatic cholestasis of pregnancy (ICP), acute fatty liver of pregnancy (AFLP), HELLP syndrome, drug-induced liver injury (DILI), and acute liver failure (ALF) [14].

ICP represents the most common pregnancy-specific liver disorder and typically develops during the third trimester, presenting with pruritus and elevated serum bile acid levels [3,9]. Its pathophysiology is multifactorial, involving complex interactions between hormonal, environmental, and genetic factors. Genetic susceptibility has been linked to mutations in the ABCB4 gene and single-nucleotide polymorphisms in genes such as ATP8B1 and TJP2 [1,2]. Recent investigations suggest that common genetic variants may influence disease severity and the likelihood of recurrence [2]. From a clinical perspective, ICP is associated with an increased risk of adverse perinatal outcomes, including preterm birth, fetal distress, and stillbirth, highlighting the need for early diagnosis and timely therapeutic intervention. Ursodeoxycholic acid (UDCA) remains the first-line treatment, demonstrating efficacy in reducing pruritus and improving biochemical parameters, although its impact on perinatal outcomes continues to be evaluated [4,15].

AFLP is an uncommon but severe obstetric complication characterized by microvesicular steatosis of the liver, most frequently occurring in the third trimester of pregnancy [5,11]. The underlying pathogenesis is associated with mitochondrial dysfunction and impaired fatty acid β-oxidation, often related to fetal deficiency of long-chain 3-hydroxyacyl-CoA dehydrogenase (LCHAD) [7]. The accumulation of toxic 3-hydroxy fatty acids leads to hepatocellular lipotoxic injury and a systemic inflammatory response [7]. Clinically, AFLP commonly presents with nonspecific symptoms such as

nausea, vomiting, abdominal pain, and jaundice, and may rapidly progress to acute liver failure, coagulopathy, and multiorgan dysfunction [5,11]. Early recognition and prompt delivery are critical determinants of improved maternal and fetal outcomes. Evidence from systematic reviews indicates that cesarean delivery may reduce the risk of adverse outcomes in severe cases [13,16].

Although less frequently encountered, drug-induced liver injury and acute liver failure during pregnancy require meticulous differential diagnosis and coordinated multidisciplinary care. DILI may arise from exposure to commonly prescribed medications, herbal supplements, or anesthetic agents, and its clinical presentation can closely resemble other pregnancy-related liver disorders [8,10]. ALF in pregnancy carries a high mortality risk and necessitates intensive supportive management, with liver transplantation considered in selected cases [12]. Elevated aminotransferase levels during pregnancy may reflect either underlying hepatic pathology or physiological adaptive changes, underscoring the importance of comprehensive clinical and laboratory assessment [6].

Despite the expanding body of international literature on liver diseases associated with pregnancy, data from specific regions remain scarce, particularly in Central Asia. Differences in genetic background, accessibility of healthcare services, and local clinical practices may significantly influence disease presentation and outcomes. Therefore, the present retrospective study aims to delineate the spectrum, clinical characteristics, and outcomes of hepatic disorders in pregnant women treated at the Republican Specialized Scientific and Practical Medical Center for Maternal and Child Health between 2015 and 2024. By evaluating diagnostic approaches, treatment strategies, and maternal–fetal outcomes, this study seeks to enhance clinical awareness and support the development of evidence-based management strategies for liver diseases during pregnancy.

Purpose of the study: To retrospectively assess the spectrum, clinical features, diagnostic strategies, and maternal–fetal outcomes of pregnancy-associated liver diseases (including ICP, AFLP, HELLP syndrome, and drug-induced liver injury) in patients treated at the Republican Specialized Scientific and Practical Medical Center for Maternal and Child Health between 2022 and 2024, and to evaluate disease distribution by gestational age, associated maternal risk factors, and the impact of treatment on perinatal outcomes.

Materials and methods

This retrospective study was conducted to determine the frequency and clinical characteristics of liver diseases diagnosed during pregnancy. Delivery records of 1,150 women who gave birth at the Republican Specialized Scientific and Practical Medical Center for Maternal and Child Health (RSNSPMCH) between January 2022 and December 2024 were reviewed. The inclusion criteria comprised pregnant women admitted for delivery with documented hepatic disorders, excluding those with liver dysfunction directly attributable to pregnancy-specific conditions such as intrahepatic cholestasis of pregnancy (ICP), HELLP syndrome, or acute fatty liver of pregnancy (AFLP).

Among the total cohort, 43 cases (3,7%) were identified as having liver diseases unrelated to pregnancy, including chronic viral hepatitis, autoimmune liver disease, and drug-induced liver injury. These cases formed the basis of the clinical-statistical analysis. Data were extracted from electronic medical records and included demographic information, obstetric history, gestational age at diagnosis, laboratory parameters (ALT, AST, bilirubin, alkaline phosphatase, bile acids), imaging findings, treatment modalities, and maternal-fetal outcomes.

Patients were categorized by type of liver pathology, and subgroup analysis was performed to assess correlations between disease type, gestational age, and obstetric outcomes. Statistical analysis was conducted using descriptive and inferential methods, including frequency distribution, mean values, and standard deviation. Comparative analysis between groups was performed using chi-square and Student's t-test where appropriate, with significance set at $p < 0.05$.

Ethical approval for the study was obtained from the institutional review board of RSNSPMCH. Patient confidentiality was maintained throughout the data collection and analysis process.

Result and discussions

A total of 43 pregnant women with liver diseases unrelated to pregnancy were included in the clinical-statistical analysis. The average age of the patients was $28 \pm 2{,}64$ years. The majority of cases (55,6 %) occurred in women aged 26–35 years, while the age group 18–25 years accounted for 38,8 %.

Women over 35 years were encountered significantly less frequently, representing a minor proportion of the study population.

Analysis of reproductive history revealed that 41,7 % of patients were primiparous, and 54,2 % were multiparous. Notably, only 3,7 % of the women had experienced three or more pregnancies, which may suggest a potential association between chronic liver disease and reduced reproductive capacity.

The distribution of liver pathologies among the study population is presented in Table 1. Hepatitis B was the most frequently diagnosed condition, found in 25,6 % of cases, indicating a high prevalence of this viral infection among pregnant women. Hepatitis C was identified in 9,3 % of patients. Cirrhosis of the liver was diagnosed in 18,6 %, and chronic cholecystitis was present in 11,6 % of the cases.

These findings highlight the predominance of viral hepatitis and chronic liver conditions among pregnant women with non-pregnancy-related hepatic disorders. Further analysis of laboratory parameters, treatment modalities, and maternal-fetal outcomes is presented in subsequent sections.

Among the 43 pregnant women with liver diseases unrelated to pregnancy, toxic hepatitis was the most frequently diagnosed condition, accounting for 34,9 % of cases. Viral hepatitis B was identified in 25,6 % of patients, reflecting a notable prevalence of this infection in the obstetric population. Cirrhosis of the liver was present in 18,6 % of cases, indicating a substantial burden of advanced chronic liver disease among pregnant women. Chronic cholecystitis was diagnosed in 11,6 % of patients, often associated with recurrent biliary symptoms during gestation. Viral hepatitis C was the least common among the identified pathologies, occurring in 9,3 % of cases.

These findings underscore the predominance of toxic and viral etiologies in the spectrum of chronic liver diseases observed during pregnancy. The relatively high incidence of cirrhosis and hepatitis B highlights the need for enhanced screening and multidisciplinary management strategies in prenatal care settings.

Toxic hepatitis emerged as the predominant liver pathology among the studied cohort, diagnosed in 34,9 % of pregnant women with chronic hepatic conditions. This finding underscores the relevance of hepatotoxic exposures and underlying metabolic disturbances during pregnancy. Biochemical analysis revealed a marked elevation in liver enzyme activity (ALT, AST) in affected patients compared to healthy pregnant women, indicating active hepatocellular injury. Despite these abnormalities, no clinical cases of jaundice were recorded, suggesting a subclinical or compensated hepatic dysfunction in the majority of cases.

Hemostatic evaluation demonstrated a statistically significant increase in fibrinogen levels ($p < 0,05$), which may reflect a compensatory response to systemic inflammation or altered coagulation dynamics associated with chronic liver disease in pregnancy.

Obstetric outcomes were also analyzed in relation to hepatic pathology. A notably high rate of surgical delivery was observed, with cesarean section performed in 62,8 % of cases. Vaginal delivery occurred in 37,2 % of patients, often in those with stable hepatic function and favorable obstetric conditions. The elevated frequency of operative delivery may be attributed to concerns regarding maternal hepatic reserve, fetal compromise, and the need for controlled perinatal management.

Preterm birth, defined as delivery before 37 weeks of gestation, was documented in 45,5 % of cases, indicating a substantial burden of early labor among women with liver disease. At the time of delivery, clinical signs of fetal hypoxia were observed in 17,4 % of pregnancies, necessitating immediate neonatal support. Furthermore, 32,6 % of newborns were classified as having low birth weight (<2500 g), including 2,3 % with extremely low birth weight (<1000 g), reflecting the impact of maternal hepatic dysfunction on intrauterine growth and placental efficiency.

These findings highlight the complex interplay between chronic liver disease and obstetric outcomes, emphasizing the need for vigilant prenatal monitoring and individualized delivery planning in this high-risk population.

Conclusion

This retrospective study highlights the clinical relevance and complexity of managing chronic liver diseases during pregnancy. Among 1,150 delivery cases reviewed at the Republican Specialized Scientific and Practical Medical Center for Maternal and Child Health, 3,7 % of pregnant women were diagnosed with hepatic disorders unrelated to pregnancy, with toxic hepatitis being the most prevalent (34,9 %). The majority of affected women were aged 26–35 years, and multiparity was common,

although high-order parity was rare, suggesting a potential link between chronic liver disease and reduced reproductive capacity.

Biochemical analysis revealed significantly elevated liver enzyme activity in affected patients, while jaundice was absent in all cases. Coagulogram findings demonstrated increased fibrinogen levels ($p < 0,05$), indicating altered hemostatic function. Obstetric outcomes were notably impacted, with cesarean section performed in 62,8 % of cases and preterm birth occurring in 45,5 %. Fetal compromise was evident, with 17,4 % of neonates showing signs of hypoxia and 32,6 % presenting with low birth weight, including 2,3 % with extremely low birth weight (<1000 g).

These findings underscore the importance of early identification, multidisciplinary monitoring, and individualized delivery planning for pregnant women with chronic liver disease. The high prevalence of viral hepatitis and toxic hepatic injury calls for enhanced screening protocols and targeted interventions during prenatal care. Further prospective studies are warranted to refine clinical guidelines and improve maternal-fetal outcomes in this vulnerable population.

LIST OF REFERENCES:

1. Bacq Y., Gendrot C., Perrotin F., et al. ABCB4 gene mutations and single-nucleotide polymorphisms in women with intrahepatic cholestasis of pregnancy. J Med Genet. 2009;46:711.
2. Dixon P.H., Wadsworth A., Chambers J., et al. A comprehensive analysis of common genetic variation around six candidate loci for intrahepatic cholestasis of pregnancy. Am J Gastroenterol. 2014;109:76–84.
3. Floreani A., Gervasi M.T. New Insights on Intrahepatic Cholestasis of Pregnancy. Clin Liver Dis. 2016;20(1):177–189.
4. Glantz A., Reilly S.J., Benthin L., et al. Intrahepatic cholestasis of pregnancy: amelioration of pruritus by UDCA is associated with decreased progesterone disulphates in urine. Hepatology. 2008;47:544–551.
5. Liu J., Ghaziani T.T., Wolf J.L. Acute Fatty Liver Disease of Pregnancy: Updates in Pathogenesis, Diagnosis, and Management. Am J Gastroenterol. 2017;112(6):838–846.
6. Morisco F. The liver and pregnancy: hypertransaminasemia and beyond. 6-th AISF Post-meeting course Problem Solving in Hepatology. Rome, 2013.
7. Natarajan S.K., Ibdah J.A. Role of 3-Hydroxy Fatty Acid-Induced Hepatic Lipotoxicity in Acute Fatty Liver of Pregnancy. Int J Mol Sci. 2018.
8. Ortega-Alonso A., Stephens C., Lucena M.I., Andrade R.J. Case characterization, clinical features and risk factors in drug-induced liver injury. Int J Mol Sci. 2016;17(5):714.
9. Ovadia C., Williamson C. Intrahepatic cholestasis of pregnancy: Recent advances. Clin Dermatol. 2016;34(3):327–334.
10. Pandey C.K., Karna S.T., Pandey V.K., Tandon M. Acute liver failure in pregnancy: Challenges and management. Indian J Anaesth. 2015;59(3):144–149.
11. Ronen J., Shaheen S., Steinberg D., Justus K.R. Acute Fatty Liver of Pregnancy: A Thorough Examination of a Harmful Obstetrical Syndrome and Its Counterparts. Cureus. 2018;10(2):e2164.
12. Rutter K., Horvatits T., Drolz A., Roedl K., Siedler S., Kluge S., et al. Acute liver failure. Med Klin Intensivmed Notfmed. 2016 May 30.
13. Wang H.Y., Jiang Q., Shi H., Xu Y.Q., Shi A.C., Sun Y.L., et al. Effect of caesarean section on maternal and foetal outcomes in acute fatty liver of pregnancy: a systematic review and meta-analysis. Sci Rep. 2016;6:288-26. doi:10.1038/srep28826.
14. Westbrook R.H., Dusheiko G., Williamson C. Pregnancy and liver disease. J Hepatol. 2016;64(4):933–945.
15. Zapata R., Sandoval L., Palma J., et al. Ursodeoxycholic acid in the treatment of intrahepatic cholestasis of pregnancy. A 12-year experience. Liver Int. 2005;25:548–554.
16. Zhang Y.P., Kong W.Q., Zhou S.P., Gong Y.H., Zhou R. Acute Fatty Liver of Pregnancy: A Retrospective Analysis of 56 Cases. Chin Med J (Engl). 2016;129(10):1208–1214.

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