ОСТРЫЙ ЖИРОВОЙ ГЕПАТОЗ БЕРЕМЕННЫХ

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Аннотация: Объяснить патогенез жировой болезни печени при беременности. Изучите типичные проявления острой жировой дистрофии печени во время беременности, а также соответствующие результаты тестов. Объясните оценку и ведение беременных пациенток с признаками и симптомами жировой дистрофии печени, значение командной стратегии, а также сотрудничество и координацию внутри межпрофессиональной команды при ведении беременных пациенток с острой жировой дистрофией печени. Результат: анализируя все данные, мы убеждены, что с прорывами в понимании патогенеза острого жирового гепатоза печени при беременности, скрининг пациенток группы риска и раннее распознавание становятся все более распространенными, что приводит к лучшим исходам для матери и плода.
Ключевые слова: *острый жировой гепатоз беременных, заболевания печени, гепатоз.*

HOMILADORLIKNING O‘TKIR YOG‘LI GEPATOZI

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Annotatsiya: Homiladorlik davrida o‘tkir yog’li gepatoz patogenezini tushuntirib berish. Homiladorlik paytida jigarning o‘tkir yog’li gepatoz odatiy ko‘rinishini, shuningdek, tegishli test natijalarini ko‘rib chiqish. Jigarning o‘tkir yog’li gepatozi bilan og’rigan homilador bemorlarni baholash va davolash, jigarning o‘tkir yog’lanishi bilan og‘rigan homilador bemorlarni davolashda jamoaga asoslangan strategiyaning ahamiyatini, shuningdek, professional jamoada hamkorlik va muvofiqlashtirishni tushuntirish. Natija: Barcha ma’lumotlarni tahlil qilib, biz homiladorlikdagi o‘tkir jigar yog’li gepatozining patogenezini tushunishdagi yutuqlar bilan xavf ostida bo‘lgan bemorlarni skrininglash va erta aniqlash, ona va homila organizmida rivojlanishi xavfi bo‘lgan asoratlarni oldini olishiga ishonch xosil qildik.
Kalit so‘zlar: *homiladorlikning o'tkir yog'li gepatozi, jigar kasalliklari, gepatoz.*

ACUTE FATTY LIVER OF PREGNANCY

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Annotation: Explain the pathogenesis of fatty liver disease in pregnancy. Examine the typical presentation of acute fatty liver in pregnancy, as well as the related test findings. Explain the evaluation and management of pregnant patients who exhibit signs and symptoms of fatty liver, the significance of a team-based strategy, as well as collaboration and coordination within the interprofessional team, in the management of pregnant patients with acute fatty liver. Result: By analyzing all the data, we are convinced that with breakthroughs in understanding of the pathogenesis of acute fatty liver hepatosis in pregnancy, screening of patients at risk and early recognition are becoming more common, resulting in better maternal and fetal outcomes.
Key words: *acute fatty liver of pregnancy, liver diseases, hepatosis.*

Introduction: Acute fatty liver of pregnancy (AFLP) is a potentially morbid obstetric complication characterized by acute hepatic failure secondary to fatty infiltration of the liver. The resultant effects include coagulopathy, electrolyte abnormalities, and multisystem organ dysfunction(1). Acute fatty liver in pregnant women is not absolutely specific but is one of the liver dystrophies,(2,3) in the etiology of which there may be the following factors:
-Toxic factors: Alcohol, medications, toxic substances
-Nutritional factors: Obesity, nutrition disorders, diseases of the pancreas, total parenteral nutrition (TPM).
-Endocrine factors and metabolic disorders: Diabetes, primary and secondary hyperlipidemia and other causes.
This disease is a rare but potentially dangerous obstetric condition defined primarily by variable degrees of hepatic failure and often manifesting in late pregnancy. These laboratory abnormalities distinguish themselves from other obstetric problems, such as hemolysis, increased liver enzymes, and low platelet count (HELLP) syndrome. Profound coagulopathy is a particularly serious consequence [4]. Given the medical advances that have been made over the years, maternal and fetal mortality has decreased. However, developing

nations could see a higher mortality rate because of their lack of capacity to provide intensive care [5].

Materials and Methods: In this study, we selected all the latest data from the top medical online websites. They are PubMed, MedScape, and other specific journals, as well as the disease epidemiological data we used from the World Health Organization website. All the collected data were analyzed and compared to each other. The most basic ones, the ones that found their confirmation, and then modern thoughts and ideas were given.

Epidemiology: Acute fatty liver of pregnancy was once thought to be extremely rare; however, increased knowledge and improved prenatal care and testing have resulted in earlier detection and recognition of milder cases. AFLP can develop in pregnant women regardless of regional epidemiology, age, or race. It is a rare pregnancy problem that usually occurs in the third trimester and affects approximately one around 20,000 pregnancies in the UK [6], it has a comparably higher incidence with a very high mortality rate [85.7%] when compared to the literature review[7]. The identification of milder symptoms, early intervention and delivery, and vigorous management of complications are all potential factors in the lower fatality rate[8].

Etiology: For a deep understanding of the mechanisms of the development of clinical manifestations of the disease and laboratory and instrumental changes, it is necessary to consider the etiopathogenesis of this condition in more detail. Acute fatty liver of pregnancy is thought to be caused by a disordered metabolism of fatty acids by mitochondria in the fetus, caused by long-chain 3-hydroxyacyl-coenzyme A dehydrogenase deficiency[9]. The provoking factors for AFLP are the first pregnancy, anamnestic data indicating a previous episode of acute fatty hepatosis, multiple pregnancies, preeclampsia, thrombocytopenic syndrome, a body mass index less than 20 kg/m2, and the male sex of the child.

Pathophysiology: Hormonal changes during normal pregnancy are related with a natural decrease in the oxidation of long- and medium-chain fatty acids, resulting in an elevated maternal blood fatty acid level throughout pregnancy[11]. Acute fatty liver of pregnancy pathophysiology: fetal fatty acid oxidation disorders are linked to acute fatty liver in the mother[12,13]. There is a clear link between AFLP and fetal mitochondrial long chain 3-hydroxyacyl-CoA dehydrogenase [LCHAD] impairment[14]. LCHAD is a component of the mitochondrial trifunctional protein, which is part of a complex mitochondrial enzyme alpha subunit. Its deficit is known to be secondary to the common G1528C mutation. LCHAD deficiency in the fetus is expected to result in the buildup of long chain 3-hydroxy-fatty acyl metabolites that are especially toxic to the liver [15] [Figure1]. As a result, high concentrations of free fatty acids such as arachidonic acid, serum nitrates, and malondialdehyde are linked to oxidative and nitrosative stress in the peroxisomes and mitochondria of pregnant women with acute fatty liver[16]. Apoptosis is induced by high amounts of free fatty acids, which promote reactive oxygen species generation and caspase activity.

The beginning is commonly between the 30th and 38th gestational week, however up to 20% of cases appear postnatally [17].

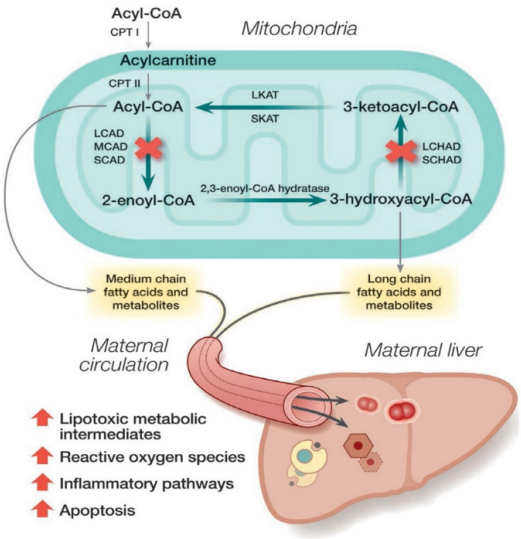

Figure 1 Pathophysiology of acute fatty liver of pregnancy. Impaired mitochondrial β-oxidation of fatty acids caused by enzyme deficiencies has been implicated in the pathogenesis of acute fatty liver of pregnancy.

Clinical Presentation: The prodromal maternal symptoms of acute fatty liver of pregnancy are frequently ambiguous and include malaise, anorexia, fatigue and abdominal pain to those of acute liver failure including hypoglycaemia, coagulopathy, jaundice and encephalopathy[18,19].

In the presence of a complete clinical presentation of acute liver failure, with a set of symptoms of more than 6, there is a high probability of AFLP according to the criteria " Swansea" [20,21,22,23] can be expected with a set of symptoms of more than 6:

1. Nausea and vomiting.
2. Pain in the abdomen.
3. Polydipsia and polyuria.
4. Encephalopathy.

5.An increase in the level of transaminases [AST, ALT is often 3-10 times higher than normal].
6.Increase in the content of bilirubin.
7.Hypoglycemia [<4.0 mmol/l].
8.Increased uric acid level [> 340 µmol/l].
9.Renal dysfunction [creatinine >150 µmol/l] in 72%, and acute renal failure requiring renal replacement therapy is 32%.
10.Increased ammonia level [> 47 µmol/l].
11.Leukocytosis [moderate I x 109/l; often 20-30 x 109/l].
12.Coagulopathy [prothrombin time more than 20% of the norm
13.Ascites or hyperechoic structure of the liver on ultrasound.
14.Microvesicular steatosis on liver biopsy and histological research [a liver biopsy is possible in the early stages, with the development severe form, especially with coagulopathy, should be avoided].

Diagnosis: Thrombocytopenia can be seen on peripheral blood smears. It is common to have disseminated intravascular coagulopathy. Prothrombin time, partial thromboplastin time, and fibrinogen levels might be elevated. Ketones, protein, and bilirubin may be detected in urine. Blood urea nitrogen and creatinine levels may be raised, as well as uric acid. Although AFLP is diagnosed histologically [Figure 2], liver biopsies are rarely conducted because to the requirement to stabilize and deliver afflicted women. Histologically, AFLP is characterized microscopically by microvesicular hepatic steatosis [Fig. 3]. The centrally located nuclei are dense, widespread inflammation or necrosis is absent, and mitochondrial dense bodies are present.

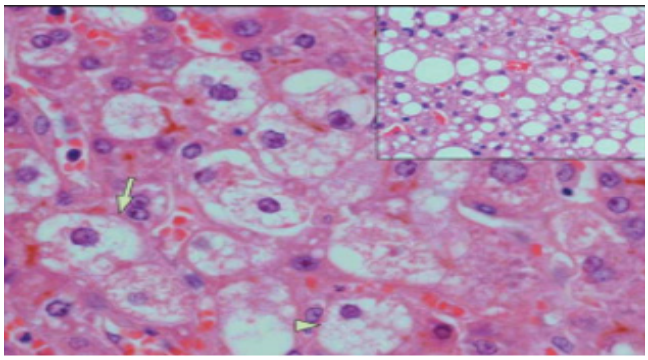

Figure 2. Liver biopsy of a patient with acute fatty liver disease of pregnancy. Micro- and macro-vesicular fat droplets with ballooned hepatocytes containing dense central nuclei. The periportal areas are often spared. The microvacuoles may be only identified on fresh sections stained for fat with an Oil Red O stain. In severe cases hepatocytes necrosis can be seen[24]

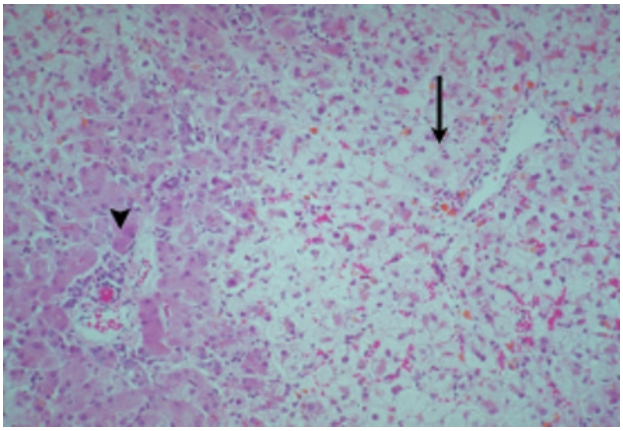

Figure 3 Acute fatty liver of pregnancy. Fat accumulation is greater in pericentral hepatocytes [arrow] compared with periportal hepatocytes [arrowhead]; hematoxylin and eosin stain. Reproduced with permission from Hammoud[25].

Management: The only effective treatment for AFLP is delivery. It is noted that perinatal outcomes are better with operative delivery by cesarean section compared with vaginal delivery[26]. Perinatal outcomes also depend on the gestational age; the shorter the gestational age, the worse they are. Indications for delivery are any minimal signs of the development of AFLP, since with a detailed presentation of acute liver failure, the outcome may be unfavorable. The structure of complications determines the extremely difficult task of developing an intensive care program, which largely depends on the predominant syndrome. Patients should be in the anesthesiology and intensive care units of a multidisciplinary hospital with the possibility of complex intensive care and prosthetics for the function of a number of organs [respiration, kidneys, liver]. Fatty infiltration of the liver completely regresses within 5–6 weeks after delivery.

Conclusion: To summarize, having a high index of suspicion for AFLP is critical in averting maternal and fetal death. Acute fatty liver in pregnant patients has the potential to cause serious issues and may necessitate special care during the peripartum period. To safely and successfully manage these complicated patients, a multidisciplinary approach is essential. Early discovery, along with advances in critical care therapy, has transformed acute fatty liver of pregnancy from a potentially deadly complication to a curable phenomenon.

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