Anesthesia And Care For Liver Diseases With Pregnancy: A Checklist

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Abstract

PERIPARTUM HEPATIC PHYSIOLOGICAL CHANGES ()

- A decrease in total protein as well albumin.
- An increase of the liver dependent clotting factors such as fibrinogen.
- An increase of alkaline phosphates 3-4 times secondary to placental alkaline.
- Normal transaminase levels and bilirubin , So any increase in transaminase levels and bilirubin , there is possibility of pregnancy –induced liver disease .

INTRAHEPATIC CHOLESTASIS OF PREGNANCY (,):

- Incidence 0.01%.
- Mainly in the third trimester .
- Pruritus alone occurs in 80 percent .
- Jaundice develop in 20 percent .
- Laboratory abnormalities include a bilirubin level less than 5 mg /dl , minimal or no elevation in transaminases,
- Infrequent, mild to moderate steatorrhea.
- The disease is rare in black patients .
- Strong family history .
- High recurrence in subsequent pregnanacies 60-70%.
- Avoid use of contraceptive pills
- Preterm delivery 20 % , Meconium staining 25 % , Incidence of fetal distress and death high if early delivery is not induced (deliver at week 38 if pruritus , at week 36 in case of jaundice)
- Multiple medications have been tried as treatments for cholestasis of pregnancy. Parenteral vitamin K , Ursodeoxycholic acid , 15 mg /kg , Cholestyramine (Questran) binds bile acid salts , Dexamethasone
- Pruritus resolve within two days of delivery but bilurubin within 4-6 weeks
- Implications on anaesthesia , check coagulation profile , ask for vit K I.V. , take care of high incidence of , fetal distress , meconium-stained , prematurity (neonatologist must attend with incubator) .

PREECLAMPSIA & ECLAMPSIA ():

- About 25% of patients with Severe pre-eclampsia with DBP >110 mmHg , proteinuria >5 gm/day and with end organ damage and 90% of those with eclampsia will have elevated AST and ALT > 5 times and bilirubin < 5 mg/dl
- If not associated with other criteriae of HELLP syndrome e.g. low platelets , haemolysis , we give prophylactic dexamethasone 8mg/12hrs. beside mg.sulphate , antihypertensive , albumin 20% /50ml/day
- Implications on anaesthesia , painless labour with epidural to reduce stress response which could continue to anaesthesia provided INR <1.5 , difficult intubation because of edema , small cuffed

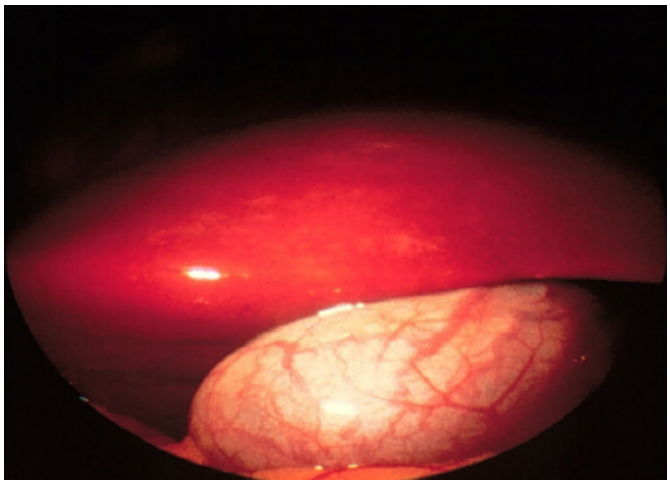
tube 6-7 mm , adequate analgesia , fluids restriction . Continue medications postoperative in ICU .

HELLP SYNDROME ():

- Peripartum multiorgan damage with pre-eclampsia or without result from very active platelets aggregation everywhere with end organ ischemia and congestion with deposition of fibrous network and entraped haemolysed RBCs & platelets, hemolysis , elevated liver enzymes, low platelets
- Diagnosis can be established by nausea, vomiting , headache and upper right abdominal pain , the best markers to follow are the maternal lactate dehydrogenase level and the maternal platelet count.
- Perinatal administration of dexamethasone (Decadron) in a high dosage of 10 mg intravenously every 12 hours has been shown to markedly improve the laboratory abnormalities associated with HELLP syndrome.
- Dexamethasone should be continued until liver function abnormalities are resolving and the platelet count is greater than 100,000. Magnesium sulfate to prevent seizures.
- Antihypertensive therapy if blood pressure is greater than 160/110 mHg despite the use of magnesium sulfate.
- Anesthesia like severe preclampsia, but avoid trauma to liver, add vit. K if INR >1.5, FFP 4-6 if INR >2 , platelets 6-8 units if platelets <50.000 in ICU.

Figure 1

Congested liver of HELLP syndrome



ACUTE FATTY LIVER OF PREGNANCY (AFLP) ():

- Complicates the third trimester and is commonly associated with preeclampsia.
- It is rare but a life-threatening condition, with an 18 percent maternal and a 23 percent fetal mortality rate.
- Anorexia, nausea, emesis, abdominal pain, rapidly deepening jaundice, headache and coma, bleeding diathesis, and hepatorenal failure.
- The diagnosis by liver biopsy which shows an intense infiltration of all the hepatocytes by fat with a marked disruption of the hepatic architecture. The alkaline phosphatase will be slightly elevated. The bilirubin is significantly elevated.
- Moderate elevations of transaminase levels (AST and ALT less than 1,000 IU per L), Prolongation of prothrombin time and partial thromboplastin time, decreased fibrinogen, renal failure, profound hypoglycemia and bilirubin >20mg/dl
- The treatment is expeditious delivery and dexamethasone 8 mg/12hr.
- General anesthesia because of coagulopathy , FFP 4-6 units if INR >2 & fibrinogen <100mg , 10% glucose infusion monitoring of serum glucose by glucocheck, keep CVP >8 cmmH2o with mannitol diuretic 20% 1 gm/kg to avoid tubular injury by urobilinogen , albumin 20% 100/day

HEPATIC RUPTURE AND INFARCTION ():

- Older multigravida mothers with preeclampsia (75 to 85 percent) are at higher risk.
- Extremely rare, 1:40,000 to 1: 250,000 .
- Avoid examination of liver or any mild trauma by ultrasound probe.
- Patients with hepatic rupture typically present in shock, with preceding right upper quadrant pain, hypertension, elevated transaminase levels (greater than 1,000 IU per L) and coagulopathy.
- Therapy for hepatic rupture has included transfusion of blood products and intravenous fluids, surgical evacuation and arterial embolization with 75 percent perinatal mortality rate have been noted in hepatic rupture.
- Hepatic infarction was typically present with fever and marked elevations in transaminase levels. In surviving patients, liver function and histopathology are normal within six months of delivery.

HYPEREMESIS GRAVIDARUM (HEG) ():

- Physiological N.&V. in 1st trimester, refused food staff found teratogenic , non-nauseating are more miscarry .
- HEG could cause malnutrition and end-organ damage e.g. oliguria, elevated AST and ALT and bilirubin.
- Rehydration + multivitamins cure most of HEG.
- Primperan 10mg/8hr. or Zofran 8mg/8hr.
- Methylprednisolone 10mg/8hrs in severe cases .
- if you can insert nasojejunal catheter and enteral feeding, TPN
- Multivitamines (thiamine B1) with fluids or TPN to avoid Wernicke ‘s encephalopathy
- Damage to Wernicke's area in the brain, Caused by thiamine (Vitamin B1) deficiency
- Chronic alcoholism , HEG without vitamins. Infusion
- Acute in onset, nystagmus, gaze palsies, gait ataxia, confusion, and coma.
- Treatment includes an (IV) or (IM) injection of thiamine 200-300 mg/day

PREGNANCY-ASSOCIATED LIVER DISEASES ()

PREGNANCY AND HEPATITIS ():

- Acute viral hepatitis is the most common cause of jaundice in pregnancy. The course is unaltered (A, B, C & D) ([10]) , While hepatitis E and disseminated herpes simplex virus (HSV) show more severe course..
- High abortion and intrauterine fetal death with chronic liver disease
- Therapy with interferon should be discontinued during pregnancy, as its effects on the fetus are unknown.
- Therapy with penicillamine (Cuprimine), trientine (Syprine), prednisone or azathioprine (Imuran) in Wilson's disease or autoimmune hepatitis can be safely continued

CHOLELITHIASIS IN PREGNANCY ():

- Pregnancy-induced changes in bile composition predispose to cholelithiasis (6%).
- Right hypochondrial pain, nausea , vomiting .
- Leukocytosis , mild to moderate elevations of transaminase and bilirubin levels.
- The same presentation as HELLP syndrome and can be distinguished by no pre-eclampsia , normal platelets .
- If common bile duct obstruction, ERCP with stent can be done even in 3rd trimester with lead aprons to shield the abdomen .
- Surgical treatment (i.e., laparoscopic cholecystectomy) can be safely accomplished in the first or second trimester, but should be avoided during the third trimester.
- Gallstone pancreatitis is associated with high amylase enzymes, 15 % maternal mortality rate and a 60 % fetal mortality rate .

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