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Liver Pathology in Pregnancy-An Autopsy Study

Medical Science

KEYWORDS :

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INTRODUCTION:

The cause of liver disease in pregnancy can be difficult to diagnose. Making the correct diagnosis is of parmount importance prompt recognition of signs of liver disease in these patients leads to timely management & well being of both mother & the fetus.

AIMS & OBJECTIVES:

1) To study gross & histomorphological features of liver & find their incidence in Pregnancy related deaths.
2) To analyze and correlate the clinical observations, biochemical parameters with the post mortem findings.
3) To study incidental findings in liver in autopsy of pregnant woman.

MATERIALS & METHODS

Retrospective study for a period of four years was carried out. 116 maternal deaths whose autopsy was requested were studied and the clinical laboratory alterations, the histomorphological features of the liver at autopsy were correlated .

OBSERVATION AND RESULTS:

CLASSIFICATION OF LIVER DISEASES IN PREGNANCY	
LIVER DISEASES RELATED TO PREGNANCY	· Hyperemesis gravidarum · Intrahepatic cholestasis of pregnancy · Pre-eclampsia and eclampsia · HELLP syndrome · Acute fatty liver of pregnancy
LIVER DISEASES UNRELATED TO PREGNANCY	**INFECTIOUS**- Bacterial-Tuberculosis,leptospira Viral-Acuteviralhepatitis,dengue Parasitic-malaria,amoebic liver abscess . **CVS**-RHD,Infective endocarditis **Hematological**-sickle cell thallesemia. **Respiratory**-pneumonia,ARDS **Gastrointestinal**-perforative peritonitis. **CNS**-meningits T.B.& Pyogenic.

Diseases Unique To Pregnancy	Total
Hyperemesis Gravidarum	1 (2.7%)
Acute Fatty Liver	1 (2.7%)
Intrahepatic Cholestasis	2 (5.4%)
Pre-Eclampsia	10 (27.1%)
Eclampsia	**12 (32.4%)**
HELLP Syndrome	11 (29.7%)
TOTAL	37 (100%)

HYPERMESIS GRAVIDARUM(1 case)

TIMING	CLINICAL FEATURES	GROSS	HISTOPATHOLOGY	COMPLICATIONS
1st trimester	Nausea,vomitting Giddiness.	Patchy areas of congestion.	Sinusoidal congestion & mild lymphoplasmacytic inflammatory infiltrate	Dehydration, & hypovolemic shock.

ACUTE FATTY LIVER OF PREGANCY (1 case)

TIMING	CLINICAL FEATURES	GROSS	HISTOPATHOLOGY	COMPLICATIONS
3RD trimester	Epigastric pain,jaundice.	Pale yellow,wt 1000 gm.,shrunken liver.	Micro & macrovesicular Fatty Change , Minimal portal chronic inflammatory Infiltrate, and Focal Necrosis.	Hepatic failure.

INTRAHEPATIC CHOLESTASIS OF PREGNANCY(2 CASES)

TIMING	CLINICAL FEATURES	GROSS	HISTOPATHOLOGY	COMPLICATIONS
3RD trimester	Jaundice & pruritis.	Greenish discoloration & mild hepatomegaly.	hepatocellular & canalicular bile plugs , Focal hepatic necrosis .	hepatic failure.

PREECLAMPSIA(10 CASES)

TIMING	CLINICAL FEATURES	GROSS	HISTOPATHOLOGY	COMPLICATIONS
2ND 3RD trimester	Hypertension(M.C.), headache,j aundice,pedaledema,	Mild Hepatomegaly, subcapsular hemorrhages.	Periportal hemorrhagic necrosis(m.c.) ,subcapsular hemorrhage.	Iufd,D.I.C., acute renal failure & septicemia.

ECLAMPSIA (12 CASES)

TIMING	CLINICAL FEATURES	GROSS	HISTOPATHOLOGY	COMPLICATIONS
2ND 3RD trimester.	Convulsions,, hypertension headache.	Mild Hepatomegaly subcapsular hemorrhages.	Submassive necrosis with subcapsular hemorrhages.	Hepatic failure ,renal failure,septicemia ,intracranial bleed

HELLP SYNDROME(11CASES)

TIMING	CLINICAL FEATURES	GROSS	HISTOPATHOLOGY	COMPLICATIONS
3rd trimester	Epigastric pain,Convulsions, hypertension, Jaundice bleeding PV.	shrunken & n ecrosed liver.	Submassive to massive necrosis with fibrin deposits,fatty changes & infl infiltrate.	Hepatic failure DIC,ARF.

MEDIAN LFT FOR DISEASES UNIQUE TO PREGNANCY

LFT	HYP GRAV. (n=1)	AFLP (n=1)	ICP (n=2)	PRE ECLAMP (n=10)	ECLAMPSIA (n=12)	HELLP (n=11)
BILI 0-1.2 mg/dl	3.6	9.6	4.1	2.1	1.7	6.1
AST 8-33 U/L	72	180	190	57	96	853
ALT4-36 U/L	123	163	350	47	332	396
ALP 20-130U/L	233	450	200	242	435	578
PT	15	20	16	14	18	23
BUN	24	7	10.9	46	27	22
CREAT0.6-1.2 mg/dl.	1.3	0.6	0.55	2.3	1.4	1.1
HB	10.9	12.4	10.2	7.3	10.0	7.1
PLATELET	24700	22600	17500	231000	157000	45000

HEPATIC RUPTURE(2CASES)

TIMING	CLINICAL FEATURES	GROSS	HISTOPATHOLOGY	COMPLICATIONS
3RD trimester	Epigastric pain & breathlessness.	Abscess in right lobe with ragged edges.	Extensive necrosis with trophozoites of E.histolytica PAS stain shows trophozoites of E.histolytica.	Septicemia due to rupture of amebic abscess.

DISEASES UNRELATED TO PREGNANCY		TOTAL
INFECTION	Acute viral hepatitis	8 (10.1%)
	Tuberculosis	8 (10.1%)
	Malaria	7 (8.9%)
	Dengue	3 (3.8%)
	Amoebiasis	2 (2.5%)
	Leptospira	1 (1.3%)
CVS	RHD	5 (6.3%)
	Infective Endocarditis	1 (1.3%)
HEMAT	Anemia	3 (3.8%)
PULMONARY	Pulm. HTN	1 (1.3%)
	Lobar Pneumonia	3 (3.8%)
	Bronchopneumonia	10 (12.7%)
	ARDS	2 (2.5%)
	Hemorrhage	18 (22.7%)
GI	Perforative Peritonitis	1 (1.3%)
CNS	Pyogenic meningitis	1 (1.3%)
	Tuberculous meningitis	2 (2.5%)
	Hemorrhage	3 (3.8%)
	TOTAL	79 (100%)

Infection In Pregnancy	Total
Acute viral hepatitis	8 (27.8%)
Tuberculosis	8 (27.8%)
Malaria	7 (24.4%)
Dengue	3 (10.2%)
Amoebiasis	2 (6.8%)
Leptospira	1 (3.4%)
Total	28 (100%)

ACUTE VIRAL HEPATITIS (8 CASES)HEPATITIS E(7CASES)

TIMING	CLINICAL FEATURES	GROSS	HISTOPATHOLOGY	COMPLICATIONS
3RD trimester & postpartum.	Epigastric pain.Fever jaundice, altered sensorium	Necrosis & shrunken.	submassive to massive hemorrhagic necrosis, canalicular bile plug,intrahepatic cholestasis.	Hepatic failurewith hepatic encephalopathy.

TUBERCULOSIS (8 CASES)

- 6 cases pulmonary tuberculosis,
- 1 case disseminated Tuberculosis
- 1 case tubercular meningitis.
- 4 cases liver involvement in which dearraanged LFTS were seen.
- the commonest cause of death was tubercular bronchopneumonia

MALARIA (7 CASES)

LFTs were mildly dearranged,with mild anemia and thrombocytopenia.

Summary

- Retrospective study of pregnancy related deaths for 4 years was done.
- 116 maternal death autopsies was studied.
- Mild hepatomegaly accounted to 36 cases.

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- jaundice was seen in most of the cases accounting to 67 (44.1%) of the 116 cases, indicating severe hepatic dysfunction in pregnant women.
- Abnormal liver function tests were seen in 58 cases. However mostly liver function tests derangements were caused by liver diseases related to pregnancy accounting for 33 cases.
- Abnormal liver function tests were seen mostly in the second and third trimester.
- hypertension related liver diseases in pregnancy - most common cause of maternal mortality 33 (89.2%) of the total cases.
- liver diseases unique to pregnancy were trimester specific with ICP, AFLP,pre-eclampsia, eclampsia, HELLP syndrome seen in the second and third trimester respectively. Hyperemesis gravidarum was seen in first trimester.
- Two cases of spontaneous rupture of liver were found, one was due to rupture of sub capsular hematoma in a case of eclampsia and other was due to rupture of amoebic liver abscess.
- The HEV seropositive patients died of fulminant hepatic failure , confirming that HEV can be leading cause of maternal mortality in viral hepatitis.
- Granulomatous inflammation of liver due to tuberculosis was seen.
- Infections-malaria 7 (4.6%) , Dengue 3 (1.97%) leptospirosis 1 (0.7%) . This indicates that pregnant women form a high risk group for malaria infection.

CONCLUSION:

- Jaundice in a pregnant female should be well investigated with LFT corelation as there might be an underlying liver disease which can be missed.
- In AFLP key enzyme for oxidation of fatty acid is defective,hence future options involve genetic testing of the mother for the carrier state.
- Prompt diagnosis & treatment has over the years reduced the maternal and fetal morbidity & mortality associated with liver diseases in pregnancy.
- To summarize, though hepatic disorder in pregnancy are rare, they remain clinically important because of the serious adverse effect on both mother and fetus.

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