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SPECTRUM OF LIVER DISORDERS IN PREGNANCY

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ABSTRACT **OBJECTIVE:** To study the spectrum of Liver Disorders in pregnancy. All pregnant patients with clinical and biochemical evidence of liver dysfunction were taken as cases. Pregnant women with normal liver function tests were taken as controls. A total of 140 patients were included, 70 cases and 70 controls. Spectrum of liver Disorders was studied.

KEYWORDS : Intrahepatic cholestasis of Pregnancy, Acute Fatty Liver of pregnancy, Pruritus, Hepatitis

INTRODUCTION

Liver disorders comprise upto 3% of all pregnancy complications[1]. Liver disorders in pregnancy are divided into three broad categories[2].

Pregnancy Specific: This includes Acute Fatty Liver of Pregnancy, Intrahepatic Cholestasis of Pregnancy, HELLP syndrome, Gestational Hypertenson, Preeclampsia, Eclampsia and Hyperemesis Gravidarum.

Pregnancy Related: This includes Hepatitis E,Budchiaari syndrome and Hepatobilliary disorders.

Pregnancy Unrelated: This includes Acute Non E hepatitis, Drug induced Hepatitis, AutoImmune hepatits, Jaundice and Chronic Liver Disease.

Obstetric cholestasis is the most common liver disorder in pregnancy.It occurs in late pregnancy affecting 1.5-2% of pregnancies[3,4].Pruritus in the second half of pregnancy which is otherwise unexplained is the most characteristic clinical manifestation[5].The most characteristic clinical abnormality is high serum bile acid levels [> 10umol/L].HELLP syndrome is an acronym for hemolysis,elevated liver enzymes and low platlets.It occurs in 0.5-0.9% of all pregnancies[6].Clinical symptoms include upper abdominal pain and tenderness,nausea and vomiting,malaise,headache,hypertension and proteinuria.Acute Fatty Liver of Pregnancy occurs in third trimester of Pregnancy.It has an acute onset and can progress very rapidly.It has an incidence of 1 in 10000 to 20000 pregnancies[7,8].It is associated with high maternal and perinatal mortality.Viral hepatitis is the most common cause of jaundice in pregnancy. Acute Hepatitis A is a self limiting disease and the prognosis in pregnancy is same as that in a non pregnant women.Hepatitis B is transmitted by parentral and sexual contact.An infection due to HBV during the second and third trimesters poses a threat of vertical transmission in 10% and 90 % respectively[9]. Hepatitis E is endemic in developing countries and transmitted by faeco-oral route.The disease is more severe when infection occurs in third trimester with mortality rates between 15% and 25%.HEV can also be transmitted from mother to infant[10] .

The liver disorders in pregnancy are associated with maternal and fetal morbidity and mortality.The key to maternal and fetal well being,is an early diagnosis and appropriate management.A pregnant patient presenting with abnormal liver tests should undergo standard workup as with any non pregnant individual.Therefore the present study was designed to see the spectrum of liver disorders in pregnancy.

MATERIALS AND METHODS

The study was conducted in the department of Obstetrics and Gynecology SKIMS MCH BEMINA,SRINAGAR over a period of two years from july 2017 to july 2019,after taking permission from Institutional Ethical Committee It was a prospective cohort study.

Participants,case Definitions

STUDY GROUP It included 70 pregnant women with elevation of bilirubin or any other liver enzymes.Pregnant women with gallstones and skin lesions were excluded.

CONTROL GROUP It included 70 normal pregnant women, with normal liver function tests.

Data Collection And Laboratory Tests Measurement

Specific symptoms related to liver dysfunction such as pruritus, nausea/vomiting, epigastric pain, jaundice and altered sensorium were asked. A thorough general and obstetric examination was carried out in all. A complete blood count, liver and kidney function tests, coagulation profile, hepatitis serology, serum bile acids and ultrasound of hepatobilliary system was performed. Spectrum of liver disorders was studied.

RESULTS AND OBSERVATIONS

This study was conducted at the SKIMS MCH Bemina, Srinagar, Kashmir [India] in the department of Obstetrics and Gynecology. This was a prospective observational study, from july 2017 to july 2019. It included 70 cases and controls. In the present study, following observations were made.

The mean age in study group was 28.1+_5.37 years[20-38] whereas in the control group, it was 27.7+_4.41 years[20-39].There was no significant statistical difference in age groups between the two groups with a p value of 0.64,as shown in table 1

Table 1: Age Distribution Of Cases And Controls

Age (Years)	Cases		Controls		P-value
	No.	%age	No.	%age	
20-24	25	35.7	14	20.0	0.631
25-29	11	15.7	37	52.9	
30-34	27	38.6	15	21.4	
35-39	7	10.0	4	5.7	
Total	70	100	70	100	
Mean±SD (Range)	28.1±5.37 (20-38)		27.7±4.41 (20-39)		

The mean gestational age in study cases was 32.9 weeks with a range of 11-38 weeks. The mean gestational age in controls was 34.5 weeks with a range of 27-40 weeks. There was no significant statistical difference between the two groups with regard to gestational age with a p value of 0.085 as shown in table 2.

Table 2: Gestational Age (weeks) Of Cases And Controls

Gestational Age (Weeks)	N	Mean	SD	Range	P-value
Cases	70	32.9	6.63	11-38	0.085
Controls	70	34.5	3.35	27-40	

The most common clinical feature at presentation in study cases was pruritus in 39 patients [55.7%],nausea/vomiting in 19 patients [27.1%],Jaundice in 8 patients[11.4%] and encephalopathy in 4 patients [5.7%] as shown in table 3

Table 3: Clinical Features At Presentation In Study Cases

Clinical Features	Frequency	Percentage

Nausea/Vomiting	19	27.1
Pruritus	39	55.7
Jaundice	8	11.4
Encephalopathy	4	5.7

The most common LFT abnormality was found to be pregnancy specific, seen in 57 patients[81.4%],pregnancy unrelated disorders were found in 9 patients[12.9%] and pregnancy related liver disorders were found in 4 patients[5.7%]as shown in table 4

Table 4: Broad Spectrum Of Liver Disorders In Study Cases

Liver Disorders	Frequency	Percentage
Pregnancy specific liver disorder	57	81.4
Pregnancy unrelated liver disorder	9	12.9
Pregnancy related liver disorder	4	5.7
Total	70	100

Among various liver disorders, Intrahepatic cholestasis of pregnancy was found in 29 patients[41.4%],Mild PET in 8 patients [11.4%], Hyperemesis Gravidarum in 6 patients[8.6%],Severe PET in 5 patients[7.1%],Hepatitis E in 4 patients[5.7%],jaundice in 4 patients[5.7%],Gestational Hypertension in 3 patients [4.3%], Hepatitis B in 3 patients[4.3%], Eclampsia in 2 patients[2.9%],HELLP syndrome in 2 patients [2.9%] and AFLP, Drug induced hepatitis, Hepatitis C and Non alcoholic Fatty Liver disease was found in 1 patient each [1.4%] as shown in table 5.

Table 5: Spectrum Of Various Liver Disorders In Study Cases

Liver Disorder		Frequency	Percentage
Pregnancy Specific	ICP	29	41.4
	Mild PET	8	11.4
	HG	6	8.6
	Severe PET	5	7.1
	Gestational HTN	3	4.3
	Eclampsia	2	2.9
	HELLP	2	2.9
	AFLP	1	1.4
	NAFLD	1	1.4
Pregnancy Unrelated	Jaundice	4	5.7
	Hepatitis B	3	4.3
	Hepatitis C	1	1.4
	DIH	1	1.4
Pregnancy Related	Hepatitis E	4	5.7

DISCUSSION AND CONCLUSION

Maximum number of patients in our study were in the age group of 30-34 years and 20-24 years with a mean age of 28.1±5.37 years. The above results were consistent with **Alokananda R et al [2005]**[11]; mean age in their study was 24.7 years. Similarly **Padmaja M et al [2010]**[12] found mean age to be 28.7 years. In a study conducted by **Rashid S et al[2015]**[13] found mean age of the patients to be 28±5.19 years.

Mean gestational age in study cases was 32.9±6.3 weeks. Similarly **Mishra N et al [2015]**[14] found maximum number of patients in her study at the onset of symptoms after 28 weeks, about 87.5% of patients in third trimester.

In our study, Pruritus was most common clinical feature found in 39 patients[55.7%], nausea vomiting in 19 patients [27.1%],jaundice in 8 patients[11.4%] and encephalopathy in 4 patients[5.7%].This was consistent with findings of **Dsouza AS et al[2017]**[15],where most common complaint was pruritus [76.5%] followed by jaundice[17.6%] and gastrointestinal symptoms[13.7%].

Spectrum Of Liver Disorders

In our study, pregnancy-specific liver disorders were most commonly observed in 81.4% of cases, followed by pregnancy unassociated disorders[12.9%] and then pregnancy related disorders[5.7%].Our observation was similar to the observation made by **Tiwari A et al[2017]**[16],where they found pregnancy specific liver disorders in 85.98% of study cases. In a study conducted by **Sumangali PK et al [2017]**[17],pregnancy specific liver disorders were found in 93% of cases. **Wong HY et al[2004]**[18] observed pregnancy specific liver disorders in 80% of cases in their observational study, conducted at Singapore. Similarly **Tank PD et al [2002]**[19] observed 76% of cases falling in the category of pregnancy specific liver disorders. In contrast in a study conducted by **Tiwari A et al [2017]**[16],among pregnancy specific liver disorders, hypertensive diseases of pregnancy was most common abnormality[66.35%],followed by ICP and viral Hepatitis.

Liver disorders in pregnancy are most common being the pregnancy specific Liver disorders, out of which Intrahepatic Cholestasis of pregnancy is most common disorder. Maternal complications in the form of Antepartum haemorrhage, Postpartum Haemorrhage, shock, renal failure, Disseminated intravascular coagulation and even death is increased. Perinatal complications in the form of Respiratory Distress Syndrome, Perinatal asphyxia, preterm birth, neonatal death, hypoglycemia and jaundice are increased.

Affected pregnancies merit close surveillance. Early diagnosis, proper maternal and fetal monitoring and timely intervention can prevent adverse maternal and fetal outcome. Proper maternal care units, with intense antepartum and Intrapartum fetal surveillance facilities need to be established. Neonatal intensive care units need to be equipped with all facilities to cater to the needs of neonates with preterm birth and perinatal asphyxia.

REFERENCES

[1] Ching CL,Morgan M,Hainsworth I,Kingham JG.Prospective study of Liver dysfunction in pregnancy in south west wales.Gut.2002;51:876-80.
[2] Cunningham FG,Leveno KJ,Bloom SL,Spongy CY,Dashe JS,Hoffman BL,et al.William Obstetrics 24th edition,Mcgrawhills:2004.
[3] Glantz A,Marshall HU,Mattson LA.Intrahepatic Cholestasis of Pregnancy:Relationship between bile acid levels and fetal complication rates.Hepatology.2004:40;467-74.
[4] Vargus RM,Caughey A,Bachetti P,Bull L.Fetal outcomes in pregnancies complicated by Intrahepatic cholestasis of pregnancy in a northern California cohort.2012;PLOS one 2012;7[3]:e28343.
[5] Mullaly BA,Hansen WF.Intrahepatic cholestasis of pregnancy.Obstet Gynecol surv.2002; 57:47-52.
[6] Haram K,Svendson E,Abildgaar U.The HELLP syndrome: Clinical issues in management –A review.BMC Pregnancy Childbirth 2009 Feb;26;9:[8].
[7] Knight M,Nelson Piercy C,Kurinczukk JJ,Spark P.UK Obstetric surveillance system.Gut 2008 july :57[7]:951-956
[8] Lee NM,Brady CW.Liver disease in pregnancy.World J Gastroenterol 2009 Feb 28;15[8]:897-906
[9] Benjaminov FS,Heathecot J.Liver Disease in pregnancy.Am J Gastroenterol 2004.99;2479-88.
[10] Dinsmoor MJ.Hepatitis in the obstetric patient.Infect Dis Clin North Am1997;7:40-46.
[11] Alokananda R,Tata Rashne J,Roshan B et al.Nature and outcome of pregnancy in Obstetric cholestasis.Obstet Gynecol India 2005 june;vol.55.
[12] Padmaja M,Bhaskar P,Kumaret GJ et al.Study of obstetric cholestasis.J Obstet Gynecol India May-June 2010;vol.60 NO.3:PG 225-231
[13] Rasheed S,Afghan S,Mazhar SB.Fetomaternal outcome in patients with liver diseases.ANN-Pak Inst.Med.SCI.2009;5[4]:211-215
[14] Mishra N,Mishra VN,Thakur P et al.Study of abnormal liver function test during pregnancy in a tertiary care hospital chattisgarh 2015;66[S1]:129-[S1]35.
[15] Dsouza AS,Gupta G.Maternal and fetal outcome in liver diseases.Internat J SCIENT res publicat 2015:21[25]:27
[16] Tiwari A,Srivastav R.Spectrum and outcome of Liver diseases in Pregnant women.int J REPROD CONTRACEPT OBSTET GYNECOL 2017 AUG;6[8]3642-3645.
[17] Sumangali PK,Kurian S et al.Study of abnormal Liver Function tests in pregnancy in pregnancy in North Kerela 2017; Dec:5[12]:5193-5196.
[18] Wong HY,Tan JY,Lim CC.Abnormal Liver function tests in the symptomatic pregnant:the local expierence in Singapore 2004;33[2]:204-8.
[19] Tank PD,Nandanwar YS,Mayedeo NM.outcome of Pregnancy withy severe liver disease.Int J Gynecol Obstet 2002;76:27-31