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ASSOCIATION OF INTRAHEPATIC CHOLESTASIS OF PREGNANCY (ICP) WITH ADVERSE FETAL OUTCOME

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Abstract:

Objective: *This study aimed to observe the relation of pregnancy intraheptic cholestasis and its adverse fatal consequences. The study design of this research is Cohort study.*

Methodology: *This Study was conducted in Holy Family Hospital Rawalpindi ;In this study a specific incuslion and excluion criteria was defined and then accordig to inclusive criteria 110 subjects including having the second trimester. These 110 patients divided into two groups both having 55 patients according to their LFTs. For example group A included those patients who had deranged LFTs and group B included those who had normal LFTs. Observation till thrid trimester continued and adverse outcomes like meconium stained liqour and preterm labor were the parameters observed and compared between both groups.*

Results: *Mean age of 110 subjects was 27.8± 4.5years. Out of all selected subjects 45% had more than one pregnancies and 30% had one pregnency while 24.5% were prim gravida. In group A 27 patients had more than one pregnancy, 14 had one pregnancy and 14 were prim gravida. In group B 23 patients had more than one pregnancy, 19 had one pregnancy and 13 were prim gravida. In group A mean Bilirubin was 2.3 mg/dL, ALP was 1039.9U/L, AST was 132.1 U/L, ALT was 132.7 U/L. Whereas in group B mean Bilirubin was 0.93 mg/dL, ALP was 622.7 U/L, AST was 28.5 U/L, ALT was 28.7 U/L. In group A 32 subjects had preterm labor while 35 had meconium stained liqour whereas in grpup B, 7 subjects had preterm labor while 7 had meconium stained liqour.*

Conclusion: *As compared to normal pregnancy ICP is a condition that can cause meconium staining liqour and preterm labor and affect fetal outcomes. However, there is no relation between parity and age with adverse fatal ountcomes.*

Keywords: *Preterm labor, Meconium, Liver function tests, liquor, intraheptic cholestasis*

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INTRODUCTION:

ICP is associated with deranged liver function tests (raised serum transaminases or raised serum bile acids) and can be characterized by itching in prior days of normal pregnant woman. Normally it starts within second or thrid trimester and after delivery within 15 to 22 days symptoms get better. Liver function changes can occur for a short time of interval and if they appear in early stages then their treatment can decrase complications both fetus and mother.

In Pakistan, the occurance of ICP is 2% while in US and Europe it is only 0.1-1.5%. ICP have also association with hormonal factors, genetic and environmental factors. Level of bile acid increased due to excessive sex hormone production and altered metabolism in liver, and this increased bile acid can be a cause of severe itching and fetal adverse outcomes. Due to this most of women have increased risk of fetal demise, meconium stained liqour and preterm delivery. “There is strong association of intrahepatic cholestasis of pregnancy with a number of complications such as preterm deliveries (25%) as compared to 6.5% in controls and meconium stained liquor in 40.4% as compared to 18.6% to control. ” This study aimed to observe the relation of pregnancy intraheptic cholestasis and its adverse fatal consequences. The study design of this research is Cohort study.

MATERIAL AND METHODS:

For this study a specific incuslion and excluion criteria was defined and then accordig to inclusive criteria 110 subjects including having the second trimester. These 110 patients divided into two groups both having 55 patients according to their LFTs. For example group A included those patients who had deranged LFTs and group B included those who had normal LFTs. All those patients were excluded who had other causes of deranged LFTs e.g. acute fatty liver of pregnancy, HELLP syndrome, gallstones, hepatitis A, B, C, E. A consent paper was signed by all the included patients. Samples was collected from both outdoor and indoor patients. Physical examination and history of each patient taken before observation in terms of gestational age, patients age, jaundice, pale stools, dark colored urine, and hypertention. To rule out any case of liver disease ultrasound of abdomen was performed. Observation till thrid trimester continued and adverse outcomes like meconium stained liqour and preterm labor were the parameters observed and compared between both groups. SPSS version 21 was used to analyzethe data. Mean SD was calculated and liver function tests, gestational age, parity and age were quantitaive variable. Whereas meconium stained liqour and preterm delivery were the qualitative variables. Between both groups to compare the frequency of fatal outcomes, Chi square test will be used.

RESULTS:

Total number of included subjects were 110 and these were divided into two groups. Mean age of 110 subjects was 27.8± 4.5years. Out of all selected subjects 45% had more than one pregnancies and 30% had one pregnency while 24.5% were prim gravida. In group A 27 patients had more than one pregnancy, 14 had one pregnancy and 14 were prim gravida.

In group B 23 patients had more than one pregnancy, 19 had one pregnancy and 13 were prim gravida.

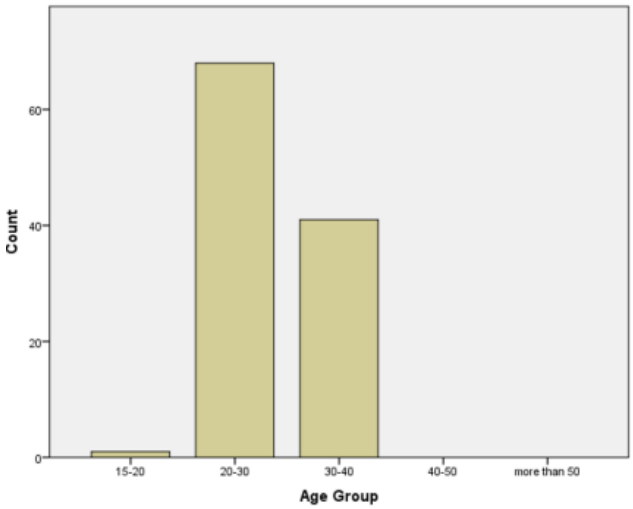

Figure 1. Age group distribution

In group A mean Bilirubin was 2.3 mg/dL, ALP was 1039.9U/L, AST was 132.1 U/L, ALT was 132.7 U/L. Whereas in group B mean Bilirubin was 0.93 mg/dL, ALP was 622.7 U/L, AST was 28.5 U/L, ALT was 28.7 U/L. In group A 32 subjects had preterm labor while 35 had meconium stained liqour whereas in grpup B, 7 subjects had preterm labor while 7 had meconium stained liqour. "In Group A mean ALT,AST,ALP and bilirubin at time of diagnosis was 132.75 + 62.25 U/L, 132.04 + 60.98 U/L, 1049.96 + 162.44 U/L and 2.34 + 0.39 mg/dL respectively. In Group B mean ALT,AST,ALP and bilirubin was at the time of diagnosis 28.71 + 6.42 U/L, 28.51 + 5.77 U/L, 622.69 + 84.31 U/L and 0.93 + 0.078 mg/L respectively as shown in Table 2. In Group A, mean ALT,AST,ALP and bilirubin at time of delivery was 54.07+ 27.498 U/L, 62.78+ 31.309 U/L, 678.02 + 100.260 U/L and 1.5064 + 0.251 mg/dL respectively. In Group B mean, ALT,AST,ALP and bilirubin was 38.18 + 21.852 U/L, 29.58 + 5.315 U/L, 575.40 + 124.393 U/L, 0.80 + 0.085 mg/dL respectively as shown in Table 2. "

Table 1. Parity distribution of both groups

Parity		Group A	Group B
Valid	0	14	13
	1	14	19
	2-10	27	23
	Total	55	55

Table 2. Mean of Liver Function Test of the patient at the time of diagnosis and delivery

		ALT	AST	ALP	Bilirubin
At the time of Diagnosis	Group A	132.75	132.04	1049.96	2.3455
	Group B	28.71	28.51	622.69	.9316
At the time of Delivery	Group A	54.07	62.78	678.02	1.5064
	Group B	38.18	29.58	575.40	.8058

Table 3. Preterm Labor and Different LFTs at time of Diagnosis

Preterm		ALT (at time of Diagnosis)	AST (at time of Diagnosis)	ALP (at time of Diagnosis)	Bilirubin (at time of Diagnosis)mg/dL
Yes	Mean	140.00	139.38	1014.21	2.1610
	N	39	39	39	39
	Std. Deviation	79.296	77.693	272.007	.67487
	Minimum	15	17	320	.90
	Maximum	300	295	1500	3.00
No	Mean	48.17	47.80	738.62	1.3515
	N	71	71	71	71
	Std. Deviation	28.772	28.501	173.449	.65276
	Minimum	15	17	350	.75
	Maximum	110	110	1100	3.00
Total	Mean	80.73	80.27	836.33	1.6385
	N	110	110	110	110
	Std. Deviation	68.347	67.550	250.308	.76404
	Minimum	15	17	320	.75
	Maximum	300	295	1500	3.00

In both groups there was a significant difference in terms of Bilirubin, ALP, AST, and ALT.

DISCUSSION:

ICP is associated with deranged liver function tests (raised serum transaminases or raised serum bile acids) and can be characterized by itching in prior days of normal pregnant woman. Normally it starts within second or thrid trimester and after delivery within 15 to 22 days symptoms get better. Liver function changes can occur for a short time of interval and if they appear in early stages then their treatment can decrase complications both fetus and mother. In our examination it was seen that cholestasis during pregnancy can detrimentally affect continuing of pregnancy. Cholestasis can be handily analyzed by an height in ALP, AST, LFTs, Bilirubin and ALP was estimated in our examination. We have seen that raised levels of Liver capacity tests in second trimester impact the fetal results. Meconium stained Liquor also, preterm Labor were two of these results seen in our investigation. Preterm Labor was seen in 58% of the patients with raised LFTs during second trimester while it was seen in 13% in typical pregnancies. Meconium stained alcohol is another genuine difficulty saw in patients with ICP. In our examination we saw that Meconium staining was found in 63%. It was additionally seen that Preterm Work was related with meconium staining in both gatherings. There was positive connection noticed among ICP and intricacies like preterm conveyance furthermore, meconium stained alcohol. Comparable perceptions were noted in our examination

CONCLUSION:

As compared to normal pregnancy ICP is a condition that can cause meconium staining liqour and preterm labor and affect fetal outcomes. However, there is no relation between parity and age with adverse fatal ountcomes.

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