FREQUENCY OF MECONIUM STAINING OF AMNIOTIC FLUID IN INTRAHEPATIC CHOLESTASIS OF PREGNANCY

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ABSTRACT

Objective: To determine the frequency of meconium staining of amniotic fluid in intrahepatic cholestasis of pregnancy.

Material and Methods: In this descriptive cross sectional study, 154 cases with Intrahepatic Cholestasis of pregnancy in their third trimester with the age group of 20- 35years in obstetrics and gynecology ward, Ayub Teaching Hospital Abbottabad were observed. The inclusion criteria were all females with Intrahepatic Cholestasis of pregnancy in their third trimester with the age group of 20- 35years. Patients with pruritic lesions, gestational diabetes, teen age pregnancy and with Evidence of acute or chronic hepatic diseases were excluded as per exclusion criteria.

Data Collection Procedure: The study was conducted after approval from hospital ethical and research committee. All women meeting the inclusion criteria and presenting with ICP in their 3rd trimester (as per operational definition above) were enrolled in the study through OPD for further workup.

Data Analysis: Data were entered and analyzed in SPSS version 10.

Results: In this study, 154 women with Intrahepatic Cholestasis of pregnancy in their third trimester were observed. Patient's age was divided in four categories. Meconium staining of amniotic fluid was observed in 13(8.44%) patients presented with intrahepatic cholestasis of pregnancy. While 141(91.56%) patients have no Meconium staining of amniotic fluid. There were 1(5%) patients have meconium staining of amniotic fluid in intrahepatic cholestasis of pregnancy ,of age less than or equal to 23 years, 4(9.1%) patients have meconium staining of amniotic fluid having age of 24-27 years, 4(6.8%) patients have age of 28-31 years and 4(12.9%) patients have more than 31 years of age. Age shows insignificant role over meconium staining of amniotic fluid with p-value=0.720.

Conclusion: Meconium staining of amniotic fluid is an enormous public health problem, accounting for the majority of cases of Intrahepatic Cholestasis of pregnant women in this part of the country.

Key words: (Meconium staining, amniotic fluid, intrahepatic cholestasis and pregnancy).

INTRODUCTION

Intrahepatic cholestasis of pregnancy (ICP) is the most widely recognized liver sickness found in pregnancy. It is regularly a reversible cholestatic illness showing in the second to third trimester of pregnancy and is described by pruritus predominantly of the palms and soles, raised serum aminotransferases and/or potentially hoisted serum bile corrosive levels (more than or equal to 14micromol/L) with unconstrained alleviation of research facility variations from the norm and side effects expeditiously after conveyance however no later than multi month post-partum[1]. Intrahepatic cholestasis of pregnancy generally displays in the late second and third trimester in spite of the fact that it has been accounted for as right on time as 6-10 weeks of gestation.[2]

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Hereditary inclination and hormonal elements have been involved in the pathogenesis of ICP[3]. The familial propensity and the perception of grouping of ICP in families prompted the conviction that hereditary qualities assume a part in its development.[4] Explaining ICP on an atomic premise in connection to sex hormones has additionally picked up interest.[5]

ICP is usually a diagnosis of exclusion after other causes have been ruled out. The most widely recognized indication is pruritus. Severity of pruritus increments around evening time and can include the palms and soles. Likewise, severity also increases as the pregnancy advances. Other side effects incorporate steatorrhea, malabsorption of fat-dissolvable vitamins, and weight reduction. Moreover ICP is related to an increase in frequency of gallstones and cholecystitis.[6]

ICP is related with an expanded danger of antagonistic fetal results, including preterm labor and intrauterine death[7]. Despite the fact that ICP is a generous condition for the mother, poor fetal outcomes can happen. In a few examinations ICP brought about untimely births up to 60%. Different inconveniences, for example, fetal distress and intrauterine deaths were accounted for at 61% and 1.6% respectaviely.[3,8]

In an ongoing immunohistochemical consider, BSEP was not recognized in the canalicular film in PFIC patients having ABCB11 change, as opposed to patients with PFIC1 or PFIC3. This proposes in many patients with PFIC-2, the quality deformity is adequately serious to create no item or a protein that can't be embedded into the canalicular laye.[9]

Liver transplantation is demonstrated in patients with decompensated cirrhosis or with a fizzled preoccupation with incapacitating pruritus. The clinical courses and results for PFIC1 beneficiaries in the wake of living-benefactor liver transplantation are as yet not that great when contrasted with PFIC2 beneficiaries. Hori et al announced 14 PFIC patients who experienced living-giver liver transplantation, including 11 PFIC1 and 3 PFIC2 patients. Three of 11 PFIC1 beneficiaries passed on, while the 3 beneficiaries with PFIC2 survived. Liver transplantation is the main powerful treatment of PFIC3.[5]

The occurrence of ICP changes enormously all through the world, as well as all through various areas in the United States too. Proof of family bunching and predominance in certain ethnic gatherings may incompletely clarify the geographic variety in rate. For instance, the Chilean populace in general has a 16% frequency of ICP, and a subpopulation in Chile, the Araucanos Indians, has a rate of 28%.[10]

While ICP is more typical in South Asia, South America, and the Scandinavian nations, the rate in the United States differs incredibly. The United States has a heterogeneous populace, and in this manner the rate has a wide range, 0.32-5.6%. ICP additionally indicates regular variety, happening all the more much of the time in the winter months.46Other chance elements for ICP incorporate progressed maternal age, an individual or family history of cholestasis with oral prophylactic utilize, and multiparity 11. Likewise, ladies with twin pregnancies are 5 times more prone to create ICP than ladies with a singleton pregnancy[11].

Mortality/Morbidity

From a maternal perspective, the primary thought is exceptional pruritus, which may turn out to be intolerable to the point that conveyance is considered as right on time as 35-37 weeks[12].The fetal perspective is additionally worried, as even with present day treatment the hazard for fetal downfall can go from 2-11 %. Hence, many would advocate acceptance at 37 weeks. 13.14. Other creators trust that a huge ascent in bile acids or constant increments in transaminases regardless of sufficient UCDA treatment should incite thought for delivery[15-16].

One of the more troubling parts of ICP is the likelihood of sudden fetal passing, once in a while inside long periods of ordinary fetal heart rate tracings[17]. Possible clarifications for this are taurocholate crossing into the fetal compartment and causing fetal arrhythmias and diminished contractility[18]. This has been archived in the rodent show. Different examinations have noticed an expanded P-R interval in human babies influenced by ICP.[55] Still others have discovered human chorionic vein choking when presented to the bile corrosive cholate. This is hypothesized as a conceivable reason for intense fetal asphyxia. A few creators have hypothesized a part for debilitated fetal adrenal function[19].

Strategies: Liver biopsy isn't required to make the analysis of ICP. In any case, if liver biopsy is performed, usually to show bile plugs without proof of irritation and bile shade in hepatocytes[20].

Amnioinfusion is the essential intercession went for lessening the frequency of MAS. Amid this system, a clean isotonic arrangement is injected into the amniotic cavity by means of catheter. By including volume into the cavity, the meconium is weakened. The diminished danger of line pressure may diminish hypoxia and lessening fetal gasping[21]. Great proof exists that amnioinfusion is compelling at lessening the consistency of the meconium[22]. The method additionally is by all accounts moderately protected. What is less clear is whether amnioinfusion is successful at counteracting MAS, a troublesome issue to examine in light of its low occurrence. In one imminent, randomized investigation of pregnancies entangled by thick meconium and oligohydramnios, amnioinfusion fundamentally diminished the rates of fetal pain, meconium desire, and MAS[23]. An ongoing meta-analysis found a 76% decrease in MAS with amnioinfusion[24]. Prophylactic amnioinfusion for MSAF when the baby generally appears to be well has not been appeared to diminish dreariness. At the point when direct to thick meconium is joined by confirmation of fetal trade off, for example, factor fetal heart rate decelerations, be that as it may, helpful amnioinfusion ought to be considered as a potential technique to diminish the danger of MAS[24].

AIM & OBJECTIVE

To determine the frequency of meconium staining of amniotic fluid in intrahepatic cholestasis of pregnancy.

MATERIALS AND METHODOLOGY

STUDY SETTING: Gynecology Department, Ayub Teaching Hospital, Abbottabad

STUDY DESIGN: Cross sectional Descriptive study

SAMPLE SIZE: It was 154. Calculation of sample size was done by using the WHO software

DURATION OF STUDY: 6 months (From Dec 1, 2014 to 31 May, 2015).

SAMPLING TECHNIQUE: Non probability consecutive sampling

SAMPLE SELECTION

INCLUSION CRITERIA

- All ladies with Intrahepatic Cholestasis of pregnancy in their third trimester.
- 20- 35years.

EXCLUSION CRITERIA

- All other pruritic lesions e.g. pemphigus gestationis.
- Women with gestational diabetes as diagnosed by history and medical records.
- Teen age pregnancy.
- Evidence of acute or chronic hepatic diseases e.g. hepatitis, pre-eclampsia and acute fatty liver of pregnancy etc.
- Diagnosed intrauterine growth retardation.

DATA COLLECTION PROCEDURE

The investigation was led after endorsement from healing centers moral and research board. All women meeting the inclusion criteria and presenting with ICP in their 3rd trimester (as per operational definition above) were enrolled in the study through OPD for further workup. Composed educated assent from every single included patient was obtained and objectives of study were clarified to them and confidentiality of the data was assured.

All the included women were have a detailed history and clinical examination. They were subjected to standard treatment protocols as per international guidelines and were followed up to the end of pregnancy to determine the meconium staining of amniotic fluid in ICP. All the women were followed regularly throughout pregnancy after their inclusion in this study and regular visits were advised. Patient was advised to come to labour room when they are in labour. Once membranes are ruptured (either spontaneously or artificially) color of liquor were observed immediately and throughout the labour.

All the previously mentioned data including name, age and address were recorded on a specially designed proforma. Strict rejection criteria were taken after to control confounders and inclination in the examination comes about.

DATA ANALYSIS

Information were entered and broke down in SPSS form 10. Mean + SD was figured for numerical factors like age. Frequencies and rates were computed for absolute factors like meconium staining of amniotic fluid in ICP. All outcomes were introduced as tables and graphs.

RESULTS

In this study, 154 females with Intrahepatic Cholestasis of pregnancy in their 3rd trimester were observed.

Patient's age was divided in four categories. Majority of the patients were of the age 28-31 years which were 59(38.3%). 20 (13%) Patients were in the range of age 23 years, 44 (28.6%) were of age range 24-27 years while 31(20.1%) lies in age group of more than 32 years of age. The investigation included age ranged from 20 up to 35 years. Average age 27.96 years + 3.76SD was the average age.

Period of gestation wise distribution shows that our sample contains majority of women having 36-40 weeks of gestation which is 92(59.7%). There were 27(17.5%) patients have less than or equal to 35 years and 35(22.7%) have more than 41 weeks of gestation. (Table 3).

Meconium staining of amniotic fluid was observed in 13(8.44%) patients presented with intrahepatic cholestasis of pregnancy. While 141(91.56%) patients have no Meconium staining of amniotic fluid. (Figure 4)

There was 1(5%) patient who had meconium staining of amniotic fluid in intrahepatic cholestasis of pregnancy, of age less than or equal to 23 years, 4(9.1%) patients have meconium staining of amniotic fluid having age of 24-27 years, 4(6.8%) patients have age of 28-31 years and 4(12.9%) patients have more than 31 years of age. Age shows insignificant role over meconium staining of amniotic fluid with p-value=0.720 (Table 4)

Period of gestation wise distribution shows that the meconium staining of amniotic fluid was found more in more than 40 weeks of gestation than less than 40 weeks. Out of 27 patients having age of less than or equal to 35 weeks suffering 2(7.4%) meconium

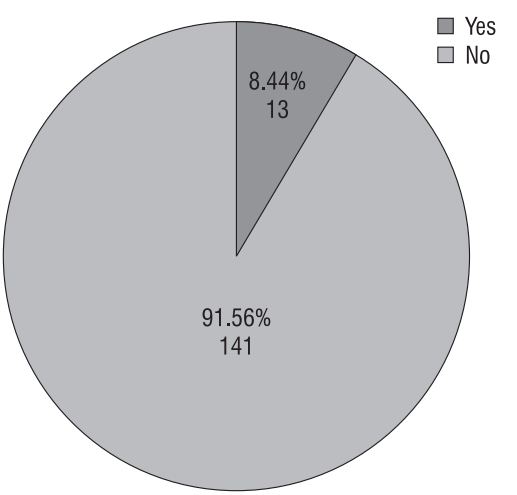

Figure No: 4 Distribution of Meconium Staining of Amniotic Fluid (n=154)

Table No: 3 Distribution of Period of Gestation (n=154)

	Frequency	Percent	Cumulative Percent
<= 35.00	27	17.5	17.5
36.00 - 40.00	92	59.7	77.3
41.00+	35	22.7	100.0
Total	154	100.0	

Table No: 4 Age Wise Distribution of Meconium Staining of Amniotic Fluid (n=154)

		MSAF		Total	p-value
		Yes	No		
age (in years)	<= 23.00	1	19	20	0.720
		5.0%	95.0%	100.0%	
	24.00 - 27.00	4	40	44	
		9.1%	90.9%	100.0%	
	28.00 - 31.00	4	55	59	
		6.8%	93.2%	100.0%	
	32.00+	4	27	31	
		12.9%	87.1%	100.0%	
Total		13	141	154	
		8.4%	91.6%	100.0%	

Table No: 5 Period of Gestation Wise Distribution of Meconium Staining of Amniotic Fluid (n=154)

		MSAF		Total	p-value
		Yes	No		
Period of Gestation (in weeks)	<= 35.00	2	25	27	0.770
		7.4%	92.6%	100.0%	
	36.00 - 40.00	7	85	92	
		7.6%	92.4%	100.0%	
	41.00+	4	31	35	
		11.4%	88.6%	100.0%	
Total		13	141	154	
		8.4%	91.6%	100.0%	

staining of amniotic fluid, 7(7.6%) had meconium staining of amniotic fluid having 36-40 weeks of gestation while 4(11.4%) had meconium staining of amniotic fluid having age more than 40 weeks of gestation. Period of gestation also shows insignificance with p-value=0.770(Table 5).

DISCUSSION

Meconium staining (recoloring) of amniotic fluid (MSAF) has for long been thought to be a terrible indicator of fetal result and meconium goal disorder (MAS), a noteworthy reason for perinatal morbidity and mortality. In a vast series[25], MSAF was found in 12% of 1, 77,000 live births. 33% of such newborn children may have meconium underneath the vocal strings (meconium goal). MAS happens in 1-3% of all instances of MSAF and in 10-30% of neonates with meconium aspiration[26,27]. The administration of children conceived through MSAF has experienced critical change over the most recent two decades and a "particular" approach is being advocated[28].

In spite of the fact that ICP is generally moderately amiable to the mother, it is realized that the danger of fetal difficulties is expanded in pregnancies influenced by ICP. These incorporate expanded dangers of meconium recolored amniotic liquid, preterm conveyance, fetal pain and intrauterine fetal destruction (IUFD). Past examinations have detailed meconium recoloring in

24%, and intrauterine fetal end in 0.4% of ICP cohorts[29]. The rate of meconium recoloring of amniotic liquid at full term in an ordinary pregnant populace fluctuates between 17– 24% and at 37 weeks gestational age is 5%, contrasted with the 9% rate saw in our examination[30].

The frequency of IHCP changes from 0.02% to 2.4% of pregnancies and around 70% of them display in the third trimester (mean 31 weeks)[31]. The occurrence shifts essentially with land area and ethnic foundation, with rates up to 15% in Chile and Bolivia and under 1% in Europe.32 A higher rate is found in twin pregnancies, following in-vitro preparation, ladies with age over 35 years, with the historical backdrop of cholestasis in past pregnancies and in ladies with a background marked by biliary infection.[31]

CONCLUSION

Meconium staining of amniotic fluid (MSAF) has for long been considered to be a bad predictor of fetal outcome and meconium aspiration syndrome (MAS), a major cause of perinatal morbidity and mortality. Meconium staining of amniotic fluid is an enormous public health problem, accounting for the majority of cases of Intrahepatic Cholestasis of pregnant women in this part of the country.

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