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ORIGINAL ARTICLE

Association Between Intra Uterine Fetal Demise (IUFD)/ Still Birth (SB) and Factors Associated with it in Patients Visiting at Tertiary Care Hospital

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ABSTRACT

Objective: To determine the association between Intra Uterine Fetal Demise (IUFD)/ Still Birth (SB) and factors associated with it in patients visiting at tertiary care hospital in Karachi.

Study Design: Observational Case Control Study

Place and Duration: This study was conducted in the department of Obstetrics & Gynecology, Aga Khan University Hospital (AKU), Karachi, Pakistan. Duration was six months from September 26, 2018 to March 25, 2019.

Materials and Methods: All patients who fulfilled the inclusion criteria were included in the study. Women with (Intra Uterine Fetal Demise/ Still Birth) were enrolled as cases and women with live Birth were enrolled as control group. Informed consent was taken after explaining the procedure, risks and benefits of the study. Associated factors such as pre-eclampsia, fetal growth restriction, gestational diabetes mellitus, obstetric cholestasis, antepartum hemorrhage, were taken from the antenatal record to assess the association with IUFD. All the collected data were entered into the proforma attached at the end and used electronically for research purpose.

Results: Mean±SD of age in case was 26.65±3.98 with C.I (25.78----27.51) and in control was 27.60±3.90 with C.I (26.75----28.44) years. In group wise distribution of gender of fetus 42 (50.0%) boys and 42 (50.0%) girls were enrolled in case and 34 (40.47%) boys and 50 (59.53%) girls were included in control group. Rate of growth restriction was 2 times more likely in cases as compare to control with [OR 2.00] while the rate of antepartum hemorrhage was 1.2 times more likely in cases as compare to control with [OR 1.205] and P value found to be non-significant i.e.(P=0.223 and 0.575) in growth restriction and antepartum hemorrhage respectively.

Conclusion: It is to be concluded that, the incidence of intrauterine fetal deaths in our population is higher than that reported from developed countries. This is associated with preeclampsia, obstetric cholestasis, diabetes mellitus pregnancy-induced hypertension, illiteracy and low socioeconomic status.

Keywords: Still Birth, Parity,Intra Uterine Fetal Demise

INTRODUCTION

A baby delivered with no signs of life known to have died after 24 full weeks of pregnancy,' according to the Perinatal Mortality Surveillance Report, Confidential Enquiry into Maternal and Child Health (CEMACH) [1].

For a long time, IUFD has been a significant but largely unrecognised cause of death in the poor countries. An estimated 3.2 million stillbirths occur each year worldwide, according to recent studies. In wealthy countries, access to high-quality prenatal and obstetric care is normal practise. This could avoid the majority of IUFD cases.

About one-third of all IUFD cases, according to research, occur intrapartum2. Pregnancy difficulties, maternal infections, medical conditions such as hypertension and diabetes, Fetal Growth Restriction and congenital abnormalities are the most common causes of SB/IUFD [2].

Preeclampsia, diabetes mellitus, preterm labour, and antepartum haemorrhage are major causes of intrauterine foetal death in middle- and low-income countries[4]. An unfavourable fate for the foetus can be attributed in part to its low birth weight. Fetal growth restriction is closely linked to IUFD [5]. IUFD is most commonly associated with stunted or no growth in the foetus.

In recent data, Pakistan has the world's highest stillbirth rate (43/1000 live births), according to the data. Some urban regions have 36/1000, while rural places have a concerning 70/1000. Worldwide, the stillbirth rate dropped by about 20% between 2000 and 2015, resulting in an annual reduction rate (ARR) of 2% (22/1000)[7]. Pakistan, on the other hand, has yet to observe any discernible decline [7]. Preeclampsia (14.7 percent), Ante-Partum Hemorrhage (14.7 percent), and Gestational Diabetes Mellitus (0.9 percent) are among the most common causes of stillbirth in Pakistan [7].

Early intervention is critical in reducing the risk of stillbirth [8]. Pre-eclampsia, gestational diabetes, antepartum haemorrhage, foetal growth restriction, and obstetric cholestasis were all found to be linked with stillbirths in studies [8-11]; however, these factors were not found to be associated with live births [8-11].

Other factors may come into play later in pregnancy, although doctors who provide obstetrical care often spend more time with patients in the beginning talking to them about their chances of having a bad pregnancy [12-13].

The study's goal is to discover the factors that contribute to stillbirth and uterine foetal death (IUFD). It is possible that the results of this study will shed light on the worryingly high levels of IUFD/SB and help identify which

linked factor is most widespread and hence presumed to have the strongest association with (IUFD/SB). By finding a statistically significant link, we will be able to develop ways to prevent stillbirths while also managing maternal difficulties in pregnancy and obstetric complications in labour. Our knowledge of the risk factors for stillbirths in our population will be improved as a result of this research because the results are predicted to vary and there are no local statistics available at this time.

MATERIALS AND METHODS

This observational case control study was conducted at Department of Obstetrics & Gynecology, Aga Khan University Hospital (AKU), Karachi, Pakistan. Duration was six months from September 26, 2018 to March 25, 2019. Total In this study, 92 pregnant women between the ages of 20 and 35 years were enrolled. In order to ensure fair distribution among the patients, they were separated into two groups: cases (intrauterine foetal death/still birth) and controls (Live Birth). The case group consists of 50 patients, while the control group consists of 42 people. We eliminated women who had multiple pregnancies (as determined by ultrasound), had a history of polyhydramnios, or had congenital defects such as hydrocephalus or anencephaly (as determined by ultrasound).

Prior to enrollment, the significance and benefits of the study were discussed to all of the recruited patients, and informed consent was obtained from all of them. The antenatal record was reviewed for possible associated variables such as pre-eclampsia, foetal growth restriction, gestational diabetes, obstetric cholestasis, and antepartum haemorrhage, all of which were classified as such by the operational definitions. All of the information gathered was documented using a questionnaire that had been previously created. In order to keep confounding variables and biasness under control, it was necessary to closely adhere to the inclusion and exclusion criteria as well as stratification. All of the information was only accessible to those who were given permission to do so.

This study used the statistical programme for social sciences to enter and evaluate the data (SPSS version 21.0). For continuous variables, such as maternal age (in years) and parity, the mean and standard deviation were computed using the standard deviation formula. For qualitative variables such as history of miscarriages, gender of the foetus, and associated factors such as pre-eclampsia, foetal growth restriction, gestational diabetes mellitus, obstetric cholestasis, and antepartum haemorrhage, the frequency and percentage were determined. It was determined whether there was an association between risk variables and intrauterine foetal death/stillbirth (case group) using the Chi square test or Fisher Exact test as applicable, and the odd ratio was calculated; an OD greater than one was considered significant.

RESULTS

S Mean ±SD of age in case group was 27.92±4.16 with C.I (26.73----29.10) and in control group was 28.74±4.21 with C.I (27.42----30.05) years, respectively as shown in **TABLE 1.**

Table 1: Descriptive Statistics of Age

AGE[years]	n	MINIMUM	MAXIMUM	MEAN	±SD	95% C.I
CASE	50	20	35	27.92	4.16	26.73----29.10
CONTROL	42	20	35	28.74	4.21	27.42----30.05

Mean ±SD of parity in case group was 0.84±0.89 with C.I (0.58----1.09) and in control group was 0.74±0.94 with C.I (0.44----1.03), respectively as shown in TABLE 2.

Table 2: Descriptive Statistics Of Parity

PARITY	n	MINIMUM	MAXIMUM	MEAN	±SD	95% C.I
CASE	50	00	03	0.84	0.89	0.58----1.09
CONTROL	42	00	03	0.74	0.94	0.44----1.03

In distribution of History of Miscarriages 12 (24%) were in case group and 22 (52.38%) were in control group as shown in TABLE 3.

Table 3: Frequency For History Of Miscarriages

GROUP	HISTORY OF MISCARRIAGES	
	Yes	No
CASES	12	38
	24%	76%
CONTROL	22	20
	52.38%	47.62%

In group wise distribution of gender 25 (50.0%) boys and 25 (50.0%) girls was enrolled in case group and 19 (45.23%) boys and 23 (54.77%) girls were included in control group as shown in TABLE 4.

Table 4: Frequency For Gender Of Fetus

GROUP	GENDER	
	BOYS	GIRLS
CASES	25	25
	50%	50%
CONTROL	19	23
	45.23%	54.77%

Table 4: Comparison Of Associated Factors In Both Groups

Associated factors	Group	Yes	No	Odd Ratio	P-Value
Pre-eclampsia	Cases	19 (20.7%)	31 (33.7%)	0.220	0.005
	Control	5 (5.4%)	37 (40.2%)		
Growth restriction	Cases	6 (6.5%)	44 (47.8%)	2.000	0.223
	Control	9 (9.8%)	33 (35.9%)		
Diabetes mellitus	Cases	5 (5.4%)	45 (48.9%)	0.220	0.147
	Control	1 (1.1%)	41 (44.6%)		
Obstetric cholestasis	Cases	2 (2.2%)	48 (52.2%)	0.585	0.566
	Control	1 (1.1%)	41 (44.6%)		
Ante partum hemorrhage	Cases	3 (3.3%)	47 (51.1%)	1.205	0.575
	Control	3 (3.3%)	39 (42.4%)		

Pre-eclampsia was was the significant associated factors between both groups with p-value 0.005. However, growth restriction, diabetes mellitus, obstetric cholestasis and antepartum hemorrhage were not statistically associated factors between cases and controls (p-value >0.05). (Table 4)

DISCUSSION

Comparing statistics has been made more difficult due to the lack of standardisation in the definition of stillbirth used by various writers. Some authors, for example [14], define birth as beginning at a gestational age of at least 28 weeks. Others have set the minimum birth weight at 1000 g [15]. Most of our patients had anaemia, which is a prominent cause of poor pregnancy outcomes. Teenagers and older women have a higher chance of miscarriage and stillbirth. Women above the age of 35 are at a higher risk, according to western studies [16,17]. Fetal deaths occurred more frequently in the 21-25-year-old range in our study. This is due to the fact that the majority of Pakistani women marry and have children before the age of 35. There is a higher risk of stillbirth among first-time mothers and those who have had at least five pregnancies [18]. As a result of a lower socioeconomic status, the incidence is higher. In addition, the majority of our patients were from low-income households. When a woman receives no or inadequate prenatal care, she is more likely to have a baby with Down syndrome. [19] In our study, we found that the rates of unsupervised births were the greatest. Cases and controls were found to have an APH incidence rate of 2.5%, which is consistent with previous investigations [20]. In our study, 5.6% and 9.9% of patients and controls, respectively, had intrauterine growth retardation. According to the other studies, the incidence ranges from 2.2 to 18.4 percent [21-22]. 6% and 3.6% of women in the study had gestational diabetes mellitus, which is comparable to other studies' findings [8]. Similar to other research, the incidence of preeclempsia was 18.5 percent in cases and 31.5 percent in controls [23].

Attending the antenatal clinic on a regular basis would allow doctors to notice high-risk symptoms such as vaginal bleeding and decreased foetal activity.

Early delivery has been advocated for women who appear in late pregnancy for the first time with a low biophysical profile score in order to avert foetal death [24].

As a general rule, pregnancy in women over the age of 40 is associated with a higher risk for stillbirth and congenital abnormalities.

Fetal fatalities are more likely to occur beyond the age of 20 and the number of pregnancies a woman has, with a peak around the age of 40 and 10 pregnancies. Pregnant women over the age of 50 are less likely to seek prenatal care because they believe that they already know everything about pregnancy. As a result, the unborn child is often overlooked as they focus all of their attention and resources on taking care of their big families. It is possible to combat this pervasive social issue by focusing on genetic counselling and family planning in health education programmes. In some cases, the government's educational offer and good health facilities may not be effective if the patient lacks effort and cooperation.

It is likely that the high rate of congenital abnormalities in this study is due in part to older mothers, as has been the case with earlier studies [26-27]. Hypertension and diabetesmellitus were shown to be connected with a high rate of congenital malformations in women over the age of 25 in Al Qassim, a city in Saudi Arabia's central region. Mothers were found to have high blood pressure and diabetes in the current survey. In terms of the malformations, anencephaly was the most common. It's generally known that low levels of folic acid in the mother are linked to neural tube defects. This nutritional supplement may have been unavailable to these moms because of their poor attendance at antenatal care and their lack of knowledge. [26-27] Congenital malformations are correlated with consanguineous marriage, which is a frequent practise in Pakistan. Despite the fact that this issue was not directly addressed in this survey, it should be considered as a potential risk factor. 54 percent of patients with congenital abnormalities in the Al Qassim research [28] were from consanguineous marriages. Consanguineous marriage is prevalent in the Assir region at 54% [29]. The prevalence of genetic abnormalities and congenital deformities may be influenced by high rates of inbreeding, which necessitates a genetic counselling campaign in this context.

In this series, we've talked about cord accidents and abruptio placentae, which are considered unavoidable risk factors. There is some evidence to suggest, however, [30], that folic acid supplementation during pregnancy may help minimise the risk of abruptio placenta.

Unexplained antepartum stillbirth is currently the experience of several researchers on this issue [31]. In this study, a majority (41%) of IUFDs were classed as "unexplained." Placental insufficiency or inadequate placentation [32], as well as genetic and immunological [33] variables, have all been suggested as possible causes, although none of these explanations go into detail on the underlying pathologies. Some of these 'unexplained' IUFDs could have been classified differently if an autopsy had been performed in our circumstances.

CONCLUSION

In conclusion, our population's rate of intrauterine foetal fatalities is higher than that reported from other industrialised nations. Anemia, diabetes, obstetric cholestasis, hypertension caused by diabetes mellitus during pregnancy, and illiteracy are all linked to this. Health education should focus on antenatal care, including the importance of frequent clinic visits, folic acid supplements throughout pregnancy, family planning, and genetic counselling. Most of these preventable foetal losses may be avoided if patients were more conscientious about following their doctor's orders.

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