Intra Uterine Fetal Death and Some Related Factors: A Silent Tragedy in Southeastern Iran

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Abstract

Objective: To determine the incidence, and some causes of intra uterine fetal death (IUFD).

Methods: This was a prospective observational study of all stillbirths over 2 years from April 2011 to April 2013 at the Imam Ali University Teaching Hospital of zahedan, Iran. The variables studied were the following: demographic characteristic, fetal factors and maternal factors. Data was collected prospectively by directly interviewing the pregnant women and from the medical chart. Data were analyzed using SPSS (Statistical Package for the Social Sciences) statistical package.

Results: The incidence of IUFD at our hospital was 88.7 per 1000 total births. The intra uterine fetal death rate had been increased in maternal ages under 20 years and above 35 years that showed a significant difference between this group and other groups (P=0.001).The rate of IUFD tend to increase significantly in primiparous women and women with parity 10 and more. The rate of IUFD tended to decreased with increasing gestational age. There were 437 (54.1%) macerated and 370 (45.8%) fresh death fetus. Unexplained' IUFD, Major congenital malformations, PROM, and preeclampsia were the three main causes of intra uterine fetal death.

Discussion: Unfortunately, in our study the incidence of IUFD was very high. The main risk factors identified were lack of antenatal care. Despite the difficulty in predicting IUFD occurrence, it appears that carefully implemented antenatal care, family planning, genetic counseling and timely management of at risk patients may contribute to its prevention.

Keywords: Related factors; IUFD; Incidence

Introduction

Fetal death at any point during gestation is a traumatic event not only to the family but also to the caregiver [1]. Stillbirths generally account for half of all perinatal mortality, with an estimated 4 million occurring worldwide each year [2]. South Asia has the world's largest numerical stillbirth burden with rates ranging from 25 to 40/1000 births [3]. Recent estimates suggest that stillbirth rates greater than 30 per 1000 births are common among the least developed countries, especially in Sub-Saharan Africa and Southeast Asia. By comparison, rates of 3-5 per 1000 deliveries have been documented in the U.S. and other developed countries and rates of 10-15 per 1000 are reported in mid-level countries, such as those in South and Central America [4,5]. According to results of study by Jahan far from Iran in 2000 the rate of fetal death in Iran was 1020 cases that 49.6% of them were male fetuses [6]. Maternal hypertension, diabetes mellitus, renal disease, and autoimmune disorders, as well as placentation abnormalities and congenital anomalies, are examples of conditions that can place the pregnancy at high risk of fetal compromise [7]. One of the methods of reducing fetal death is recognizing its effective factors and improving them. In most cases, deaths with known causes are preventable easily. The problem is more difficult in death with unknown causes. We undertook this study to describe the pattern of IUFD by its related factors.

Materials and Methods

Women admitted during the period April 2011–April 2013 with complaints of fetal death were studied prospectively. The data for this study was gathered using a standard questionnaire, which included the following sections: 1. Descriptive data such as gestational age (weeks), macerated or fresh fetus, maternal age, parity, receiving prenatal care, gestational diabetes, preeclampsia, premature ruptured membrane (PROM), intrauterine growth retardation (IUGR),.Data collected were entered into the computer using the Statistical Package for social Sciences (SPSS) Windows version 16. Observed differences were subjected to Chi-square test and the level of significance set at P<0.05.

Results

There were a total of 9090 deliveries with 807 fetal deaths during the study period, giving a stillbirth rate of 88.7 per 1,000 total births. There were considerable differences in the figures for using of routine antenatal care. Only 112 (13.87%) had had antenatal care, while 695 (86.1%) had no documented evidence of antenatal care in any medical facility.

The rate of IUFD tended to decreased with increasing gestational age. Thus, 506 (62.7%) were born between 22- 32 weeks while 301 (37.29%) were born between 32-42 gestational age. There were 437 (54.1%) macerated and 370 (45.8%) fresh death fetus. Among 807 totals IUFD, there were 410 (50.8%) male death fetus and 397 (49.1%) female death fetus. This was not significant (p=0.34).

The intra uterine fetal rate had been increased in maternal ages

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under 20 years and above 40 years that showed a significant difference among other groups (P=0.0001). The rate of IUFD tends to increase significantly in primiparous women and women with parity 10 and more (Table 1).

Table 2 shows possible associated risk factors involved in IUFD. In 344 (41.38%) pregnancies, the risk factors could not be determined. There were 306 (38%) major congenital malformations (anencephaly and Neural tube defects), 177 (22%) PROM and 114 (14%) preeclampsia. Of the other factors, abruption placenta and diabetes mellitus, Meconium stain and IUGR were the important related factors.

Discussion

In our study incidence of intrauterine fetal death was much higher than in comparison to rates reported from the other city of Iran. IUFD rate had been 12.74 per 1000 in study Hadavi et al. [8]. Lack of antenatal care in a majority (86.1%) of the mothers is certainly a contributing risk factor. Zahedan has been located in south of Iran with people who are low- socioeconomic situation. Poor attendance at antenatal clinics have recognized phenomenon among Zahedan women. As a result, women who had no antenatal care had a higher risk for a stillbirth compared to those women with antenatal care. In India, Shah et al found that stillbirth rates among women without antenatal care (ANC) were higher than women with ANC [9]. Our data support prior studies, Reeske et al. reported that mothers living in the most deprived areas had an increased risk of stillbirth, as did women who were or had a partner who was unemployed [10,11]. Stanton C et al. reported the vast majority of the world's 3.2 million annual stillbirths occur in low- and middle-income countries [12]. Evidence from our study suggested that rates of IUFD have linked to maternal age fewer than 20 and above 40 years. Showghy has stated that pregnancy at the age of 16 years and less can increase the IUFD risk factor by 4 times [13]. These also agreed with studies reported by Martin and Wilson [14,15]. We found that, high parity, especially of 10 and above, associated with IUFD. It has been observed that the multiparous women rarely seek prenatal care due to their personal opinion that they know all about pregnancy. They tend, rather, to devote all their time and energy in the care of their large families, thus neglecting the unborn child. The most common cause of stillbirth in the present study was major congenital malformation including anencephaly and neural tube defects (NTD). Poor attendance of antenatal care and lack of folic acid consumption may explain why these women could not avail themselves of this nutritional supplement. In addition, consanguineous marriage, which is common in Zahedan, is an important correlate of congenital malformation. PROM, preeclampsia, Abruption of placenta, diabetes mellitus, Meconium stain and IUGR were the other common cause of fetal death in this study, respectively. These were in agreement with the finding of several other authors [16-18].

Conclusion

We claim that for reduction of IUFD rate, we will require thorough investigation into the main cause of death, especially about unexplained IUFD. Moreover, we strongly recommended placenta histology, karyo-type as part of the diagnostic evaluation. Folic acid consumption before and during pregnancy, emphasis on antenatal and regular prenatal care and family planning can also be able to decrease cause of IUFD rate. We highly recommend further studies in this setting to assess the effect of intervention aimed to reduced pregnancy wastage in Zahedan.

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Maternal age	Number of birth	Number of IUFD	IUFD per 1000 deliveries	p-value
≤ 20	2,190	136	62.1	
21-30	3,100	335	10.8	0.0001
31-40	3,055	238	7.7	
≥ 40	745	98	13.15	
Parity				
1	2874	110	38.2	
2-5	2976	301	10.11	0.000
6-9	2335	213	9.12	
≥ 10	905	183	20.2	

Table 1: Distribution of IUFD according to maternal age and parity.

Factors	Number of cases (%)
'Unexplained' IUFD*	344 (41.38%)
Major congenital malformations	306 (38%)
PROM	177 (22%)
Preeclampsia	114 (14.1%)
Abruption placenta	112 (13.87%)
Diabetes mellitus	103 (12.76%)
MECONIUM STAIN	97 (12%)
IUGR	66 (8.1%)

Table 2: Related factors in 807 IUFD.

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