Prevalence and risk factors of intrauterine fetal death in Kurdish pregnant women

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ABSTRACT

Intrauterine fetal death (IFUD) is considered as a health index and it occurs in 1 out of 100 pregnancies. The aim of this study was to evaluate the prevalence and risk factors of intrauterine fetal death in pregnant women who referred to Besat hospital in Sanandaj, Iran. This case-control study was conducted on 270 women. Case group consisted of 135 women who hospitalized because of intrauterine fetal death and control group were 135 pregnant women who had successful labor. The data were gathered from medical records of participants and recorded in a checklist. Data were analyzed using SPSS Ver.18 software. The results showed that the prevalence of IUFD in Sanandaj was 1.61 out of 100 live births. From 135 women who hospitalized because of IUFD, 9 (6.6%) women had placental problems, 48 (35.5%) cases had maternal problems, 18 (13.3%) women had fatal problems and in 60 (44.5%) cases the cause of intrauterine fetal death was unknown. There was a significant relationship between IUFD and multiple pregnancies (p=0.001), history of previous IUFD (p=0.000), placental problems (p=0.031) and fetal asphyxia (p=0.007). The results showed that the incidence of IUFD in Kurdish women is higher than norm; therefore pregnancy care for Kurdish women is essential and recommended.

KEY WORDS: intrauterine fetal death, fetal demise, related factors.

1. INTRODUCTION

Intrauterine fetal death is defined as fetal death at 20 weeks gestation or a minimum 350 grams birth weight. The intrauterine fetal death rate has been estimated as 1% (Ferguson and Myers, 1994).There is many factors that can affect a successful pregnancy and causing fetal intrauterine death. In two thirds of IUFDs the causes of intrauterine death are unknown (Korteweg, 2008). The causes of fetal death are classified into three groups including; fetal, placental and maternal causes. Among maternal causes preeclampsia and diabetes are important and among fetal causes of IUFD genetic and congenital anomalies are significant as well as among placental causes placental decolman is important (Cunningham and Williams, 2010). The risk of stillbirth increases with decreasing gestational age (Rosenstein, 2012). Some risk factors of stillbirth are including; race, smoking, history of stillbirth, obesity, age also studies have found many factors that increase risk for stillbirths in high-income countries (Flenady, 2011). Previous studies have also reported that Black and Asian women have a higher risk of stillbirth compared to White women (Smeeton, 2004; Balchin, 2007). Some fetal abnormalities are responsible for 25 to 40 percent of stillbirths and the incidence of major congenital abnormalities which have been reported in stillbirth are highly variable (Silver, 2007).

South Asia and sub-Saharan Africa have the highest rates of stillbirth (Reeske, 2011). The incidence of stillbirth in western countries has been reported as 4.7% to 12.0% (Farrant, 2016). In comparison with other countries the rate of IUFD is increasing in Iran and it is estimated as 2.2% per year (Jahanfar, 2005). Given that there is not yet a reliable incidence rate of IUFD among Kurdish women, the aim of this study was to evaluate the prevalence and risk factors of intrauterine fetal death in Kurdish pregnant women who referred to Besat hospital in Sanandaj.

2. MATERIALS AND METHODS

This case-control study was conducted on 270 women. Case group consisted of 135 women who hospitalized because of intrauterine fetal death and control group were 135 pregnant women who had successful labor. Purposive sampling method was used. The data were gathered from medical records of participants and recorded in a checklist. Data were analyzed using SPSS Ver.18 software. Descriptive statistics were used to determine the frequencies also the chi-square test and Fisher's exact test were used.

3. RESULTS

The results of this study showed that the prevalence of IUFD in Sanandaj was 1.61% out of 100 live births. From 135 women who hospitalized because of IUFD, 9 (6.6%) women had placental problems, 48 (35.5%) cases had maternal problems, 18 (13.3%) women had fetal problems and in 60 (44.5%) cases the cause of intrauterine fetal death was unknown.

The highest frequency of women with intrauterine death was for 16-35 years group also the most of intrauterine death occurred in 19-28 weeks gestational age group. Total of 28 (20.7%) women had previous IUFD and 16 (11.9%) had congenital abnormalities (Table.1).

There was a significant relationship between IUFD and multiple pregnancies (p=0.001), history of previous IUFD (p=0.000), placental problems (p=0.031) and fetal asphyxia (p=0.007) and congenital abnormalities (p=0.000).

The results also showed that there was a significant relationship between IUFD and preeclampsia (p=0.003), Gestational Age (0.000) and fetal causes of IUFD (0.001) (Table.2).

Table.1. The frequency distribution of women with IUFD based on study variables

Variables		No. (%)
Causes of IUFD	Placental	9 (6.6)
	Fetal	18 (13.3)
	Maternal	48 (35.5)
	Unknown	60 (44.6)
Total		135 (100)
Age of Mother	16-35 Years	103 (76.3)
	>35 Years	32 (23.7)
Total		135 (100)
Gestational Age	<19 weeks	0 (0%)
	19-28 weeks	84 (62.2)
	28-37 weeks	31 (23.00)
	>37 weeks	20 (14.8)
Total		135 (100)
Pregnancy	Singleton	112 (83.00)
	Multiple	23 (17.00)
Total		135 (100)
History of previous IUFD	Yes	28 (20.7)
	No	107 (79.3)
Total		135 (100)
congenital abnormalities	Yes	16 (11.9)
	No	119 (88.1)
Total		135 (100)
Fetal asphyxia	Yes	7 (5.2)
	No	128 (94.8)
Total		135 (100)
Preeclampsia	Positive	23 (17.00)
	Negative	112 (83.00)
Total		135 (100)

Table.2. The relationship between IUFD and study variables

Variables		Case		Control		Total		P Value
		No	%	No	%	No	%	
Pregnancy	Singleton	112	46.1	131	53.9	243	100	0.001
	Multiple	23	67.5	4	32.5	27		
Total						270	100	
history of previous IUFD	Yes	28	80	7	20	35	100	0.000
	No	107	45.5	128	54.5	235		
Total						270	100	
placental causes	Yes	9	81.8	2	18.2	11	100	0.031
	No	126	48.6	133	51.4	259		
Total						270	100	
Gestational Age	19-28weeks	84	100	0	0.00	84	100	0.000
	28-35 weeks	31	75.6	10	24.4	41		
	>35 weeks	20	13.8	125	86.2	145		
Total						270	100	
Fetal causes	Positive	18	85.7	3	14.3	21	100	0.001
	Negative	117	47.00	132	35.00	249		
Total						270	100	
Preeclampsia	Positive	24	75.00	8	25.00	32	100	0.003
	Negative	111	46.6	127	53.4	238		
Total						270	100	

DISCUSSION

The results of present study showed that from 135 women who hospitalized because of IUFD, 9 (6.6%) women had placental problems, 48 (35.5%) cases had maternal problems, 18 (13.3%) women had fetal problems and in 60 (44.5%) cases the cause of intrauterine fetal death was unknown. In a study by Nanbakhsh (2006), the cause of 43.7% of intrauterine death was unknown which was the same as our finding.

In our study the prevalence of IUFD in Sanandaj was1.61% out of 100 live births and in a study by Zarei (2009), it was 4% in Ahwaz, Iran. They also showed that the prevalence of IUFD in Arab ethnic is high. It seems that the race is affecting factor for IUFD. Majority of residents in Sanandaj are from Kurd ethnic and compare to Arabs it seems that the prevalence of IUFD in Kurdish women is lower than Arabs. Previous studies have also reported that Black and Asian women have a higher risk of stillbirth compared to White women (Smeeton, 2004; Balchin, 2007).

The results of this study showed that the highest frequency of women with intrauterine fetal death was for 16-35 years group also the most of intrauterine death occurred in 19-28 weeks gestational age group. In a study by Zarei (2009), more than 75% of women were in 15-34 years age group with high frequency of intrauterine fetal death, they showed a significant relationship between IUFD and age and with increasing age the chances of intrauterine death increases. Based on our study and previous studies the mother`s age is another risk factors for IUFD.

We found a significant relationship between IUFD and gestational age (0.000). In a study by Pilliod (2012), the risk of IUFD increased with gestational age. They concluded that the risk of IUFD increases in small for gestational age fetus. This finding is consistent with our findings. According to these studies there is a relationship between IUFD and gestational age.

The results of present study showed a significant relationship between IUFD and multiple pregnancies (p=0.001), history of previous IUFD (p=0.000), placental problems (p=0.031) and fetal asphyxia (p=0.007) and congenital abnormalities (p=0.000). We in our study also showed that there was a significant relationship between IUFD and preeclampsia (p=0.003), gestational age (0.000) and fetal causes of IUFD (0.001). Most of previous studies which evaluated the risk factors for IUFD have reported these factors as risk factors for IUFD (Balchin, 2007; Maignien, 2014; Korteweg, 2008; Lin, 2015; Zarei, 2009; Nanbakhsh, 2006). It seems that most IUFD risk factors which described in previous studies were affecting the IUFD rate in Kurdish Women too.

4. CONCLUSION

The results of this study showed that the incidence of IUFD in Kurdish women is higher than the norm; therefore pregnancy care for Kurdish women is essential and recommended. We also found that there was a significant association between IUFD and some factors including; multiple pregnancies, history of previous IUFD, preeclampsia and gestational age which could be considered as risk factors for IUFD.

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