SOCIO-EPIDEMIOLOGY OF ANTEPARTUM FETAL DEATH IN
A MEDICAL COLLEGE HOSPITAL

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Abstract: *Objective: To assess socio-epidemiology of Antepartum Fetal Death IAFD) in a tertiary hospital in Bangladesh. Method: Fifty three pregnant women with intra-uterine fetal death before or after delivery were interviewed in Gvnaecologv in-patient of Dhaka Medical College Hospital during 2004-2005. In this cross sectional study selected socio-demographic factors like age, education, occupation, income etc. and epidemio/ogic factors like previous stillbirth or congenital anomaly history, antenatal history, and other medical conditions like gestational diabetes and pregnancy induced hypertension were sought. Results: Respondents were young (25.15 ± 6.45), married at an earlier age (18.51 ± 2.85), majority (62.26%) got pregnant at <=20 years and more than 50% were primigravid. Most (84.9%) of the respondents were either illiterate or low educated whereas 53% of the husbands were so. Nearly 70% worked more than 8 hours a day, almost half had low family income. History of stillbirth (13.21%>) and congenital anomaly (9.43%) in previous pregnancy were also found with AFD. More than half (29, 54.7%) of the respondents did not take ANC during this pregnancy. Only 3 respondents had gestational diabetes and 7 had pregnancv induced hypertension. Conclusion: Increasing the age at marriage and pregnancy, education, adequate rest during pregnancv and off course, increasing coverage of ANC could bring about satisfactory outcome if taken care of before future pregnancies.*

Key Words: Antepartum Fetal Death (AFD), stillbirth, pregnancy, socio-epidemiology, medical college hospital.

Introduction

No pregnancy can be predicted away form complications hence imparting to follow each with caution[1]. Complications of pregnancy contribute to maternal as well as perinatal and neonatal mortality[2]. With marked reduction in maternal and infant mortality in developed countries, focus has been directed towards perinatal mortality[3].

Foetal death has been defined a different way in different countries[4,5,6,7]. Considering the age of viability to be ?28 weeks of gestation in Bangladesh, stillbirth refers to any foetal delivery showing no signs of life. And that foetal death occurring before the onset of labour is Antepartum Foetal Death (AFD). Search is going on to find out the causes of this sad demiseS. Though intrapartum and neonatal mortality has decreased in developed countries, no comparable reduction in AFD has been achieved so far[4,9,10] in developing countries. While developed

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countries are trying to prevent it by looking at the causes[5,11,12,13] research is not so adequate in Bangladesh, of the different causes[11,12] related to AFD, socio-epidemiologic factors like mother's age, race, inadequate ante natal care (ANC), social burden, pregnancy decision, education and parity previous stillbirth, previous history of hypertension (HTN) and diabetes (DM) in pregnancy have been identified to be most frequently associated with the risk of AFD[13-20]. The studies mainly dealt with perinatal and neonatal mortality[2-9,11-13,17-20] hence lacking information specifically on AFD. This study was aimed to learn the socio-demographic characteristics of AFD in our settings so that we can come up to some hypothesis.

Materials and Methods

The cross-sectional study recorded basic socio-demography and pregnancy related information of 53 pregnant women with intra-uterine death before and/or after delivery in Dhaka Medical College Hospital during the period of 2004-2005 with pre-tested interview schedule and checklist. History of previous stillbirth, abortion, congenital malformation and medical illness in this pregnancy like PIH and GDM were sought.

In 2003, a total of 11.824 patients were admitted in Obstetrics & Gynecology department of DMCH. Of the admitted cases, 9078 were obstetric cases. A number of 552 perinatal deaths were recorded, of which 243 were AFD. This brings out 2.67% AFD of total obstetric cases.

had purposively interviewed 53 cases as they got information of this many cases during the stipulated time of research period.

The collected data were cleaned and checked before final entry to SPSS. The age was categorized starting with <20 years and then into a 5 years interval group. The age at marriage and first pregnancy were classified into two dividing by < 20 years. The gestational age was categorized as premature if gestational age was <38 years. The monthly income was grouped <2000 taka, <2000~<5000 taka, <5000~< 10000 taka, and > 10000 taka a month. Income below 5000 taka was considered low income. Literacy up to SSC was categorized as low education. Respondents who worked ?8 hours/day during this pregnancy were considered hard working mothers. After data entry, descriptive assessment was done with frequency analysis. The association of education and occupation of the respondents and their husbands were assessed. A p value of <0.05 was considered significant. The important factors (more than 50% proportion) were assessed for simultaneous association. Finally the proportion of those important factors was calculated to show how much they explain AFD from socio-demographic perspective.

Results

The respondents' age was 25.15+6.47 years on average, mostly 20-24 years (41.5%) with range

Table-1: Basic demographic and obstetric feature Basic Demography Frequency (%) Mean = SD years. Mean age at marriage was 18.51 ± 2.85 years; 83"o of them got married at ?20 years, the lowest being 12 year while the highest was 31. Mean age of 1st pregnancy was 20.13+3.08 years, and around 62% became pregnant at ?20 years. One mother experienced her first pregnancy only at 13 years of age. Nearly 80% had delivery before 38 wks of gestation in this pregnancy; around half (28. 52.83%) of them were primigravida. Of the multigravid patients, 3 (5.66%) had no living issue. More than half (29, 54.7%) of the respondents did not take ANC during this pregnancy. Others (45.28%) took ANC at a mean gestational age of 15.54 6.28 weeks. The average number of ANC was 4 1 and mostly the total number of ANC was either 3 (37.5%) or 4 (25%). More than 50% respondents (32) earned less than 5000 taka per month with an average monthly income of 5676.4 taka with very high standard deviation (SD) of 4674.24 taka. Majority of the respondents were either illiterate or low educated (45. 85%) compared with 52.83% to that of their husbands (< 218.79. p< 0.001). They were mostly housewives (42, 79.25%) working for an average of nearly 10 hours a day. Nearly 70% worked hard for more than 8 hours a day during the pregnancy. Out of 25 multigravid respondents, 7 gave history of stillbirth and 5 gave the history of congenital anomaly in previous pregnancy. In the present pregnancy, 8 respondents developed PIH while 3 developed GDM. There was no history of exposure to radiation or any teratogenic drug. As there were multiple responses, important factors were

Basic Demography	Frequency (%)	Mean ± SD
Age (years)		25.15 + 6.45
Age group 20-24 years	22(41.51)	
Age at Marriage (years)	18.51 ±2.85	
< 20 years	44(83.02)	
Age at First Pregnancy (years)		20.13 + 3.08
< 20 years	33 (62.26)	
Gestational age (weeks)		35.19 +3.62
Premature (< 38)	42 (79.25)	
Primigravida	28(52.83)	
Working Hour		9. 89 ±2. 13
No ANC	29(54.72)	
1 ANC Time (weeks of gestation)		15.54 ±6.28
Number of ANC Taken		4± 1
Monthly Income (Taka)		5676.4 ±4674.24; 3500*
2000~<5000 (30-100)	25(47.17)	
Low Educat ion	45(84.9)	
Hard Working	37(69.81)	
Husband's Low Education	28(52.83)	
Previous Stillbirth	7(13.21)	
Previous congenital anomaly	5(9.43)	
GDM	3(5.66)	

Table 2. Frequently associated factors with AFD (multiple responses included)

Basic Heading	Factors	Frequency (%)
Demography	Younger age (<25years)	30(56.60)
	Primigravida	28(53.8)
	No/low education	45(84.91)
	Hard Working	37(69.81)
	Low income (<5000 taka/month)	32 (60.38)
History	NoANC	29(54.72)

segregated. Those factors were young age (30), primigravida (28), low education (45), hard working (37), low income (32) and with no ANC (29). The factors were sought for concurrent involvement with AFD and it was found that all the factors were concomitantly present in only 9 (16.98%) AFD cases giving us a chance to explain AFD from socio-epidemiological perspective leaving rest 83.02% improperly explained or unexplained.

Discussion

This study bears limitation of looking at the victims of AFD only disregarding the normal pregnancy outcomes for control analysis with limited socio-demographic search. But this was the first to scope the subject in Bangladesh so far known that gave us basic idea so that hypothesis could be generated.

Adolescent pregnancy can increase the risk of complications leading to AFD. The respondents were mostly young, married at their early age and primigravid. Alessandri et al.[21] found younger age at delivery with lower parity to be associated with AFD. Nancy JP et al revealed in 1999 that half of the Bangladeshi girls are married and produce their first child while still adolescents[22]. Most patients were illiterate or low educated with low income. This low educational status might hinder independent decision making of the respondents regarding marriage, which in turn affects their pregnancy decision. The respondents were heavy workers too that could bring about the deleterious effect on the featus and subsequently could be related to AFD. Different studies[20,21,23,24] described low education and high workload could be associated to AFD.

Less than half of patients took first ANC at around 16 weeks of pregnancy. The study by Zhang[23] revealed that the lack of ANC is highly associated with AFD. Our study also finds that most respondents did not take any ANC. There were few histories of stillbirth and congenital anomaly in previous pregnancies These factors could impose further risk of recurrent AFD in subsequent pregnancies. Freeman RK24 et al stressed on the fact that a previous history of stillbirth carries maximum risk of developing AFD in subsequent pregnancies. They advised for early initiation antepartum foetal surveillance for those pregnancies with previous stillbirth so that timely intervention through labour induction or caesarean section can be initiated. This study found PIH and GDM as risk factors for AFD which was also observed by different studies[11,15,25,26] for following up these pregnancies with vigilance.

Conclusion

Increasing age at marriage and pregnancy, education, adequate rest during pregnancy and above all, increasing ANC visit should be the key to avert any unwanted pregnancy outcome.

Whether the socio-demographic features can be added for other medical and obstetric factors of mothers and with foetal factors to explain AFD, needs further exploration through large scale multi centric prospective studies.

Acknowledgement

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