

Magnitude and Risk Factors of Stillbirth in a Tertiary Hospital

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To assess the prevalence and biosocial and obstetric risk factors for antepartum and intrapartum stillbirths of a tertiary hospital, a cross sectional hospital based study conducted in the department of obstetrics and gynaecology of Rajshahi Medical College Hospital duration one year from January to December 2008. A total of 370 stillbirths occurred out of 12,176 deliveries that took place during the study period giving an over all stillbirth rate 30.4 per1000 births of which 41.3% occurred in the intrapartum period the majority of the patient (81.1%) were in the low risk group, viz 21-25 years, 67.6% were under weight, 40.5% had no formal education and 73% hailed from rural area. Nullipara were 60%, 80% had no antenatal visit, and only 16% had regular antenatal checkup. About 32.4% presented with decreased foetal movement, 32.4% delivered preterm while 43% had low birth weight. Obstructed labour and misuse of oxytocin were the leading cause of stillbirth. Hypertensive disorder of pregnancy and IUGR were respectively 16.2% and 10.8%. About 2.7% were unexplained. Avoidable intrapartum stillbirths continue to be quite high where timely and appropriate intrapartum intervention must be taken to prevent foetal loss. The identified antepartum risk factor should be evaluated for antepartum intervention and due importance of maternal movement scoring must be stressed at risk patient because which in expensive.

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Introduction

A baby's death whenever however it occurs is a profound loss.¹ Stillbirth is a relatively rare adverse pregnancy outcome in western countries such as Sweden (3.4 per 1000 live births) but situation is reverse in our country.² Stillbirth rate is still higher in our situation. When it happens it causes great emotional distress for the parents. Stillbirth is an important indicator of access to and quality of antenatal and delivery

care. So, stillbirth prevalence at the community is typically less than 1% in more developed parts of the world and could exceed 3% in less developed regions.³

It is to some extent a preventable disorder. So, increase awareness among community about the importance of regular antenatal care and intranatal care in pregnancy is necessary for its better management and to reduce antepartum and intrapartum stillbirths.

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Controversy remain about the precise definition of stillbirth broadly it is defined as foetal death in late pregnancy. The United State and Canada defined viable pregnancy more than 500 gm and gestational age exceeds more than 20 weeks. In the developing world, when foetus death occur more than 28 weeks or birth weight is 1000 gm or more. In developing countries reduction of both antepartum and stillbirth one of the chief objective of public health program. In contrast, most developed countries have been able to reduce infant mortality and intrapartum stillbirth. So, reduction of intrapartum stillbirth to 10% or less of all foetal death is credited to the availability of effective birth attendants supported by skilled obstetrician, advanced medical technology and specialized institutional facilities.⁴ This study was designed to assess the prevalence and biosocial and obstetric risk factors for antepartum and intrapartum stillbirths of a tertiary hospital.

Methods

This was a cross sectional study conducted in the department of obstetrics and gynaecology of Rajshahi medical college Hospital. The study population were the cases of stillbirths occurred between January and December 2008. We administered a structured questionnaire to all the medical officers working in the department. They were requested to provide information on the stillbirths they noticed during the period. There seventy cases of antepartum and intrapartum third trimester foetal death were identified during one year period.

To assess the incidence and causes of stillbirth. biosocial factors were analyzed age, body mass index, urban versus rural population. Clinical aspects like reproductive history, ANC attendance, gestational age, perceived loss /reduced foetal movement,

foetal weight and associated medical and obstetric complications of pregnancy were assessed.

Results

The total number of deliveries during the study period was 12,176. The number of stillbirth identified during the period was 370 resulting in and overall stillbirth rate of 30.4 per 1000 births. Of these 190 were identified as intrapartum death which constituted 41.3% of total stillbirth. The age distribution of the patients 81.1% were 21 -25 years, 16.2% were 26 – 30 years, 2.4% were 31 – 35 years and 0. 27% were > 35 years age group. Among them 40.5% had no formal education, 54.1% had primary education, 27.0% had secondary education and 5.4% were graduated above. The women were hailed from urban area (27.0%) and rural (73%) areas.

Table I: Association between BMI and stillbirth (3= 370)

Body mass index	Number	Percent
<18.5 kg/m ²	250	67.6%
>18.5-24.9 kg/m ²	100	27.0%
>25-29.9 kg/m ²	10	2.7%
>30 kg/m ²	10	2.7%

Table II: Distribution of studied pregnant women having stillbirths in relation to gestational age (3= 370)

Duration of pregnancy in weeks	Number	Percent
28-32	60	16.2%
32-36	60	16.2%
36-40	100	27.0%
40-42	100	27.0%
>42	50	13.5%

We also attempt to evaluate the association between body mass index and stillbirth. About 67.57% were under weight 27.03% had normal weight and 5.40% were over weight and obese. A systematic review of obstetric factors revealed that 60% were nullipara, 20% were para 1, 10% each were para 2 and para 4. About 40% patients had no history of previous abortion, 20% gave history of previous one first trimester abortion and 40% had a history of a second trimester pregnancy loss. About 80% had no ANC visit, 16% had regular antenatal checkup and another 4% had

irregular antenatal checkup. The distribution of Stillborn in relation to gestational age, 16.21% stillbirth were seen at 28-32 weeks, 16.2% were seen at 32-36 weeks, 27.02% each were seen at 36-40 weeks and 40-42 weeks and 13.5% were more than at 42 weeks.

Mean weight of stillbirths foetus 27.2% were less than < 1500 gm. 16.21% weighted 1500-2001 gm. 40.54% weighted 2001 -2500gm, 5.41% weighted 3000- 3500gm and 2.70% had birth weight 3500-4000 gm.

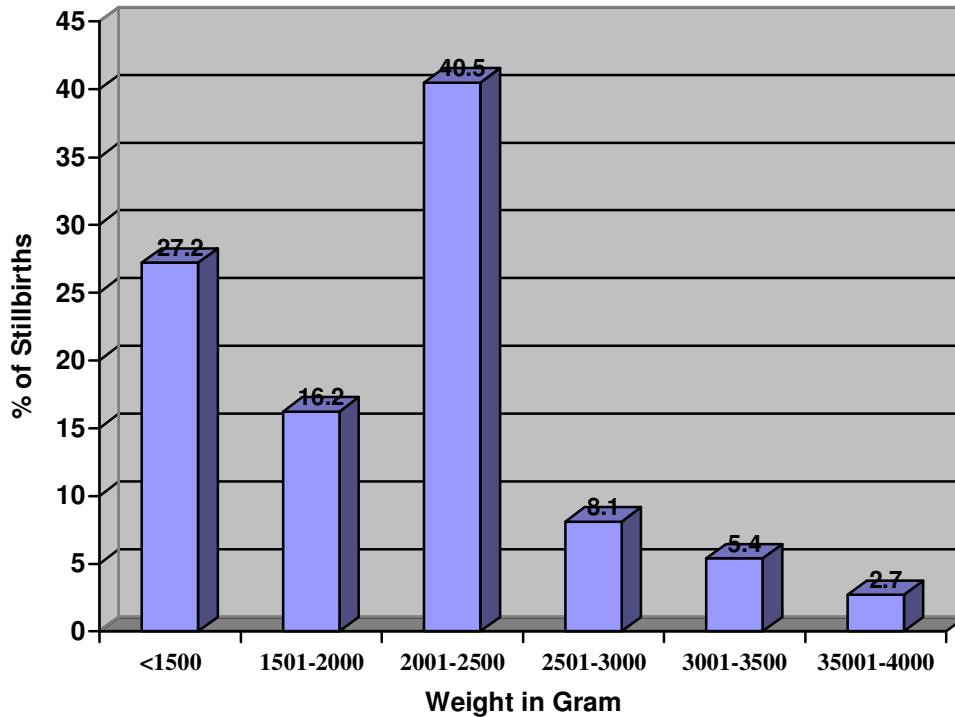


Figure 1. Stillbirth in relation to foetal weight

Maternal Perception of decreased or loss of foetal movement was also assessed. Only 10.8% gave a history of loss of foetal movement, 32.4% had decreased foetal movement and another 54.0% had not appreciated any change in foetal movement.

Finally survey of obstetric factors contributing to foetal loss revealed that 16.2% had hypertensive disorder complicating pregnancy, 10.8% had IUGR, anaemia was noted in 2.7% and 2.7% had presented with prolonged ruptured membrane. 13.5% had different type of ante partum haemorrhage. 2.7% had vaginal breech delivery who delivered a fresh stillborn. In 10 patients there were no obvious clinical risk factors. So aetiology of stillbirth was unexplained in 2.7% of the study group.

In the study group obstructed labour constituted 24.3% and misuse of oxytocin constituted 24.3%.

Table III: Obstetrical factors contributing to foetal loss (n= 370)

Obstetric factors	Number	Percent
Hypertensive disorder of pregnancy	60	16.2%
Anaemia	10	2.7%
Obstructed labour	90	24.3%
Misuse of oxytocin	90	24.3%
PROM	10	2.7%
APH	50	13.5%
Vaginal breech delivery	10	2.7%
Unexplained	10	2.7%
IUGR	40	10.8%

Discussion

Stillbirth is adverse outcome in pregnancy. A lot of effort is devoted to investigate risk factors and causes of stillbirth. Although this was a small Hospital – based study, the result reflect current obstetric experience in tertiary centre. The stillbirth rate was varyingly expressed in different studies either per 1000 birth or as a percentage.

In this study stillbirth rate was detected 30.38/1000 births. A study in Nepal showed overall stillbirth rate was 22.7/1000 births.¹ The antepartum and intrapartum stillbirth decreased 18.4/1000 birth in 1950 to 6.7/1000 births in 2000.⁵ A University Hospital in Denmark quoted on overall stillbirth rate of 4.57/1000 births.⁶ Similar study in a large teaching Hospital, It was 5.9/1000 births of which 92.5% were antepartum.⁷ A study in rural Ghana and over all stillbirth rate was 34.25/1000 births 67% occurring in the intrapartum period.⁸ While in a community based study in rural Sudan it was 23.9/1000 births.⁹ In a Kenyan study it was 23/1000 births.¹⁰ The figure of developing country are closed to our own study. Intrapartum death in our study was 41.3%, rural Ghana study it was 67%, these are the preventable death appropriate intervention during labour can prevent the foetal loss. In the developed world reduction in antepartum and intrapartum, foetal death can be attributed to better access to vastly improved antepartum and intrapartum care and revolution in neonatal care that enabled obstetrician to deliver a foetus, particularly remote from term, when its health was in jeopardy. There is a considerable body at evidence establishing the importance of adequate antepartum and intrapartum care in preventing stillbirth.¹¹ Poor literacy being an indicator of socio economic and nutritional deprivation. In our study 40.5% had no formal education, 72.8% hailed from rural area and about 80% had no ANC visit. Larger studies shown that there

was closer link between poor literacy, rural population, importance at antenatal visit with poor pregnancy outcome. Advanced maternal age was found conclusively to increase the risk for stillbirths with women 35 – 39 years having a relative risk of 1.3 and women 40 years a relative risk of 1.88.¹² Maternal obesity was shown to more than double the risk of stillbirth by Kristensen et al while no significantly increased risk was found among underweight. This study was not consistent with other study. In this study stillbirth rate more common among women 21- 25 years which constitute 81.1%. Stillbirth rate in our study 67.6% which was due to under weight. The important risk factors of malnutrition leading to IUGR was low maternal weight in pregnancy.¹³ Sarken et al reported that delivery of a previous small for gestational age infant was an important predictor of subsequent risk of stillbirth.

Intrauterine malnourishment may lead to a live born small for gestational age or stillbirth.¹⁴ In our study 40% had history of second trimester pregnancy loss and 32% had history of preterm and 33% had history of small for gestational age. Abnormalities in placental implantation, vascularization, and function play a particularly important role. As the foetus grows with advancing gestation, the demand on the placenta increase. Poor growth in a foetus at less than 32 weeks suggest that even remote from term, the maternal – placental unit has already exhausted its reserve. The data presented by Sarken et al demonstrate that the conditions that cause this exhaustion tend to recur and can have manifold effects. The significant risk factor noted by Getahun et al in the United States were maternal age > 35 years, BMI > 30 kg/m². Prior preterm or SGA birth.¹⁵ To quote other American studies, Frets reported the most prevalent risk factors to be pre-pregnancy obesity, socioeconomic factors and advanced maternal age.¹⁶ infection related

deaths asphyxia and prematurity were the common associations seen in rural Tanzania.¹⁷

Simpson noted 10% of fetal death were related to maternal medical illness such as hypertension anaemia and diabetes.¹⁸ Of the studies in the UK, Sarken et al noted that half of unexplained stillbirths had a normal antenatal course with no associated factor. IUGR was the most common. The major causes of medical and obstetrical factor, hypertensive disorder of pregnancy was 16-21%, anaemia was 2.7%, IUGR 10.8%. In another study 15-20% of IUGR were due to placental insufficiency.¹⁹ In our study the frequently reported direct cause of stillbirths were obstructed labour 24.32% misuse of oxytocin 24.3% and vaginal breech delivery 2.7%. These are avoidable losses.

Conclusions

In order to focus on this long neglected area, a stillbirth collaborative research resource is to be established the network should use standardized protocols to investigate the scope and causes of stillborn in given population. To increase awareness among community about avoidable death like obstructed labour, misuse of oxytocin where timely appropriate intervention can reduce the foetal loss. Early identification and appropriate management “At risk” for foetal death viz IUGR, hypertensive disorder. The high risk pregnant mother is to given effective instruction toward foetal movement scoring system in the III trimester and lastly. Hospital based surveillance and issuing of stillbirth certificate may increase the awareness among the obstetrician and community.

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