Original Article APMC-292

Is Stillbirth Still a Challenge?

Shabnum Sibtain, Prabha Sinha

ABSTRACT

Objectives: To evaluate the risk factors in women with pregnancies affected by stillbirth and the management in subsequent pregnancies. **Design:** Retrospective study. **Setting:** District General Hospital. **Population:** 65 women were identified having had a stillbirth. **Methodology:** This is a retrospective study over 4 years in East Sussex Healthcare Trust. The inclusion criteria were stillbirths after 24 weeks of gestation. The exclusion criteria were twin pregnancy with single fetus demise under 24 weeks. The demographic details, predisposing risk factors, body mass index, and details of the baby were collected and analysed. Main outcome measures. Maternal and fetal risk factors. **Results:** Sixty five women were identified for the study (0.4% of all deliveries) out of which 62 case notes (95.4%) were retrieved. The ethnic distribution were (87%) Caucasian, (8%) Black Africans, (2%) Asians and 3% were unknown. Primigravida (38%) had a higher rate of stillbirth. In 58% the booking BMI was <30, 11% were obese and in 31% not recorded. In 61% there was an identifiable risk factor. Almost one third of the women (30%) smoked. In only 76% of the cases post-mortem examination was performed out of which 25.8% had no pathology. **Conclusions:** Loss of a baby can be extremely distressing to the couple as well as to the health care provider involved in her care. Close antenatal surveillance with adequate emotional support is the cornerstone in management of these women as recent CEMACH report identified suboptimal intrapartum care in 40-75% of cases.

Keywords: stillbirth, Post mortem examination, risk factors, confidential enquiry, suboptimal care

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Article Citation: Sibtain S, Sinha P. Is Stillbirth Still a Challenge?. APMC 2016;10(1):46-51.

INTRODUCTION

Still birth is defined as fetus which shows no signs of life and born after 24 completed weeks of pregnancy. The incidence is 1 in 200 babies1. Substandard care among intrapartum-related deaths has been found to be high in various regional and national audits. Significant suboptimal care in more than 40% of cases was detected in final outcome according to the three major audits performed in the UK.[1]

Scotland has a significantly higher rate as major suboptimal care was found in at least 46% among ten European nations.

According to CEMACH report, there has been a decrease in the stillbirth rate from 5.7 per 1,000 total births in 2002-2004, to 5.2 per 1,000 total births in 2007. There has also been a significant decrease in the stillbirth rate for twin from 16.7 per 1,000 total births in 2000, to 12.2 per 1,000 total births in 2007 (3.4 times higher than the singleton). First twins accounted for 41% and second twins for 59% of stillbirths[1].

In an international study of confidential enquiries into fetal and neonatal deaths, 65% of singleton stillbirths were classified as "unexplained" in 2007. Interventions to reduce stillbirths require action at all levels of the health system. The likely cause of majority of stillbirth may be identified by thorough investigations of each case, along with protocols written with the pathologist.

Risk factors

Mothers over 35 and less than 20 years have been found to have an increased risk of stillbirth and neonatal death and the risk increases from 40 years of age onwards [2,3,23] Higher levels of deprivation and an increased risk for preterm delivery are associated factors.

Maternal pre-pregnancy BMI is another risk factor as less than 18.5 and more than 35, compared to normal (18.5-24.9) has higher rate. Obese vs non obese women have higher risk (11 per 1000 for BMI > 40.0 kg/m2 vs 5.5 per in normal BMI) [4,22,24,26]

Non-White ethnicity has been associated with increased risk of stillbirth and neonatal death in the UK, USA, and in Europe [2,3,21,22]
Nulliparous women have a higher rate of stillbirth compared with multiparous women in all maternal age groups [2,3,23]
Social deprivation is associated with an increased risk of stillbirth and neonatal death [5,6,7,24]. Late bookers and unbooked women are at more risk compared to women who have regular antenatal care with early booking [8,25].
Infection related stillbirth is more common before 28 weeks of gestation vs term infant (19% vs 2%).
Other risk factors associated are diabetes, multiple gestations, previous pregnancy complications (preterm delivery, growth restriction, thromboembolism, or preeclampsia)[27,28]. Women with previous live born growth-restricted infant at less than 32 weeks of gestation vs women with previous stillbirth have 2-fold risk for subsequent stillbirth. Severity of fetal growth restriction is linked with increased cumulative risk.
Placental abruption is more likely to cause stillbirth particularly in a preterm fetus.
Abnormal karyotype rate is found to be 8% to 13% in stillbirths and if anatomic abnormalities compared to no abnormalities (> 20% vs 4.6%). Dysmorphic features or skeletal anomalies are present in 20% and major malformations in 15% to 20% of the cases[4].

METHODOLOGY

It was a retrospective study of 4 years 2006 to 2009 at ESHT which delivers 4200 woman annually on two sites. The hospital, which covers an area of 1,725 square kilometres with population of just over half a million and has the highest levels of deprivation of all the counties in the South East of England and ranks amongst the 20 most deprived areas in the country. One in four adults in East Sussex smoke and these accounts for nearly 1,000 deaths in the county. One in five mothers smoke in pregnancy which is significantly higher than the England average.
The inclusion criteria were stillbirth after 24 weeks gestation. Twin pregnancy with single fetal demise under 24 weeks was excluded. Maternal and fetal risk factors were taken into account.
Sixty five women were identified for the study (0.4% of all deliveries) but only 62 case notes (95.4%) were available. The incidence was comparable to the other studies.
Maternal risk factors such diabetes, PIH; other medical disorders, ante partum haemorrhage, maternal infections, IVF pregnancy, drug abuser, uterine rupture. Ethnicity, BMI and parity were taken in to consideration as well.
Fetal risk factors were congenital abnormality, fetal distress, Prematurity, IUGR and cord prolapse. Other factors such as gestation at delivery, induction and augmentation of labour, mode of delivery, birth weight and sex of the baby were also examined.

RESULTS

This study showed the ethnic distribution were (87%) Caucasian, (8%) Black Africans, (2%) Asian and 3% of unknown origin .In 61% there was an identifiable risk factor (Figure 1).

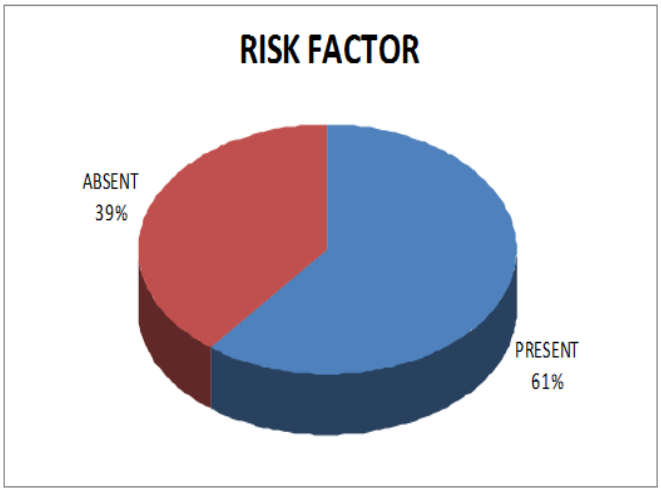

Figure 1: Risk Factors

Almost one third of the women (30%) smoked. 17% had ante-partum haemorrhage and 14% had pregnancy induced hypertension (figure2). In 58% the booking BMI was <30, 11% were obese and in 31% not recorded (figure3). Primigravida have a higher rate of stillbirth compared with multiparous women (figure4).In 19% the loss was after 38 weeks .57% of the babies were male(figure 5). In 60% (37/ 62) labour was induced, 80 % (50/62) had Spontaneous vaginal delivery, 10 % (6 /62) emergency caesarean section and 10 % (6/62) had instrumental deliveries. The presentation at delivery was 87% (54/62) cephalic and 13% (8/62) breech. In 76% of the cases post-mortem examination was performed out of which 25.8% had no pathology.

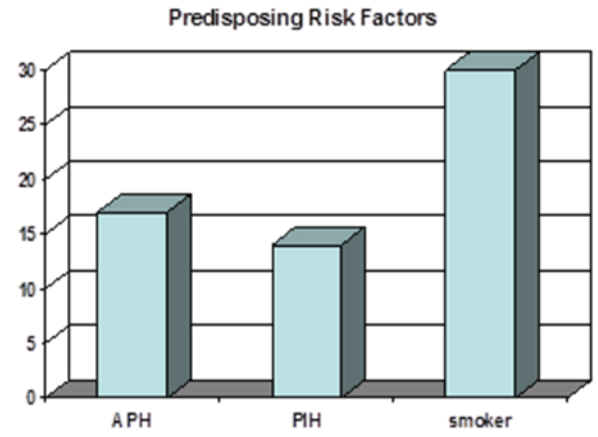

Figure 2: Predisposing Risk Factors

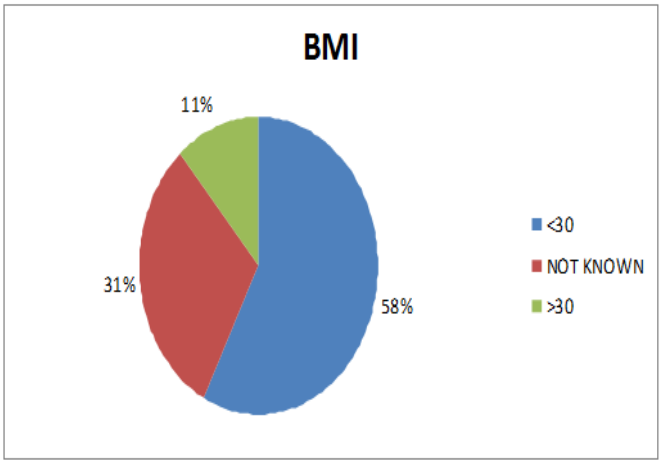

Figure 3: Relationship with Body Mass Index (BMI)

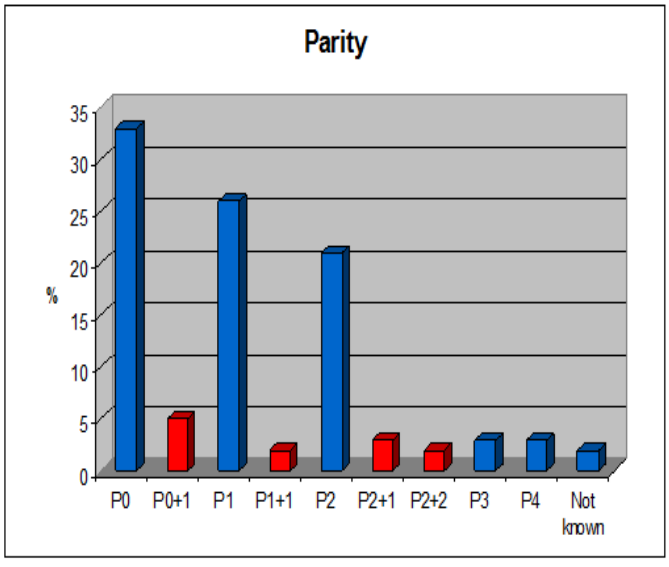

Figure 4: Relationship with parity

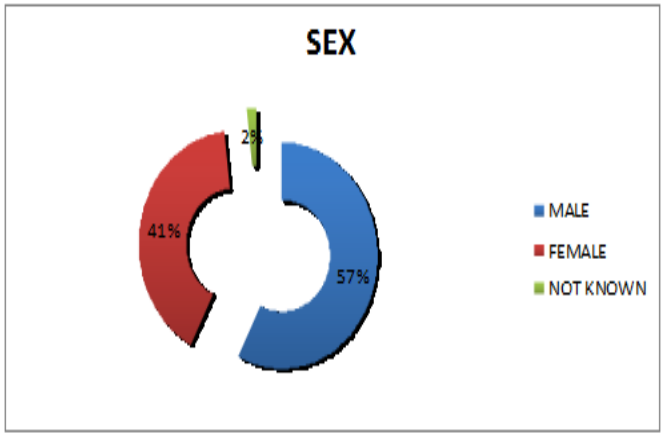

Figure 5: Gender distribution

DISCUSSION

Main Findings

This study did reflect the deprivation of this area and smoking in pregnancy which has the highest incidence of stillbirth as compared to other risk factors. After smoking the second common risk factor was abruption which can also be related with smoking therefore cessation of smoking can have great impact in reducing the incidence in this area. Therefore this risk needs to be highlighted to this population. The pregnancy induced hypertension was the other risk factors in our study.

The risk assessment in each patient would help to identify the problem so that appropriate management can be provided. Good antenatal care may also improve the outcome.

The study also confirmed that incidence of stillbirth was more in first pregnancy as compared to multiparous. The scan findings were normal in majority of the cases although 14% had IUGR and 12 % had congenital anomalies.

Several reviews suggest that effective perinatal interventions can substantially reduce the stillbirth and neonatal death rates worldwide as improving perinatal health is the key to reducing the stillbirth[10].

The risk is increased among obese mothers as the severity of obesity increases at all gestations and regardless of fetal number[11,22,24,26]

Stillbirth rates in ≥40 years of age is double than their younger counterparts. Older mother is more likely to be primigravida, may have undergone assisted reproductive technologies (ARTs) which can be associated with multiple pregnancy[12]. The older ones are at more risk.

The risk of stillbirth for women 40 to 44 years of age at 39 weeks is comparable with that of 42 weeks in those 25 to 29 years of age [2,3,13].

Rate of fetal growth restriction are similar in the stillborn babies in both younger and older women and is the main categories of the late unexplained still birth [14,15]. Therefore growth should be evaluated where there is a doubt, especially in obese and elderly mother. Good diabetic control, use of antenatal prophylaxis in high risk women as well as serial scanning for fetal growth with Doppler studies and fetal monitoring in labour in women with previous growth restricted fetus helps in reducing the incidence of still birth[16]. Customised weight-for-gestational-age charts may contribute in identification of growth restricted infants.

Women with prior infant deaths, young mothers, socially deprived are about three times more likely to experience stillbirth in their subsequent pregnancy therefore it is essential for them to have ante partum monitoring[17].

Widespread use of cardiotocography with caesarean section for fetal distress has led to significant declines in stillbirth rates therefore screening and monitoring can identify high-risk pregnancies for an appropriate management. However, the use of these techniques is controversial, as their ability to detect fetal compromise is mostly not known and depends on its appropriate and timely intervention. Many questions remain unanswered about optimal timing, frequency, and implications of these tests.

Strength and Limitation of Study

The strength of the study relates to maternal and fetal risk factors as well as the duration of study (4 years). The main study limitation was that it was a retrospective study which lacks individual current information. We are not aware how the affected families coped with the subsequent pregnancy and what was the outcome. There is need for follow up of the affected couples. Therefore prospective study is required. Another limitation was post-mortem, which was not done in nearly one third of cases. There is need to encourage more post-mortem. The study predominantly involved the Caucasian, so do not know if the outcome equally applies to other ethnicity.

Interpretation

Overall, easy access to care, screening for pregnancy related disorders and time of delivery are the appropriate care in women with previous stillbirth[17].

Single mothers seem to be associated with an increased risk therefore targeting this population by increasing awareness, education and providing proper obstetrical care may be of beneficial and reduce the risk[18]. Thus improving the uptake of quality antenatal and intrapartum care can reduce the incidence.

Post-mortem may help in detecting the cause of still birth, therefore should be encouraged[19]. Discussion with parents should include referring to fetus by name; reasons for post-mortem and details of the procedure[4]. When consent for full post-mortem is not given then less invasive tests can be offered such as visual inspection, measurements, photographs, radiographs, ultrasound examination, and magnetic resonance imaging, testing of skin or blood investigations[4]. Fetal weight, head circumference, length, and placental weight should also be recorded. Photographs should include views of the whole body, face, extremities, palms, and any abnormalities, as well as of the placenta.

Good antenatal care and emotional support is the mainstay of subsequent pregnancy management. Appropriate antenatal care can potentially serve as a platform to screen and treat risk factors when identified. It can also reduce harmful exposures and risks of infections.

As stillbirth occurs sudden and unexpected it is very difficult to break the bad news to the women and her family. Women's as well as her partner's thoughts and wishes should be identified by empathetic approach which can speed recovery. These women often feel inability to produce healthy child and loss of self-esteem.

Better knowledge of unexpected stillbirth is important for better parental counselling and prevention of recurrence for future. The presence of counsellor and health professionals can provide the support required [20].

CONCLUSION

There is insufficient information in literature regarding the management of women with previous stillbirth. Safe and timely comprehensive essential and emergency obstetric care can reduce the risk as multiple antenatal risk factors are identified. Stillbirth has profound emotional, psychiatric and social effects on parents, relatives and friends. It is associated with an increased psychological morbidity in subsequent pregnancy and puerperium and a likely breakdown of relationship. There is a

need of further research regarding the management of women with previous stillbirth.

ACKNOWLEDGEMENTS

We would like to thank the audit department of East Sussex hospital trust for the support.

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Submitted for Publication:	09-03-2016
Accepted for Publication:	20-03-2016

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Dr. Prabha Sinha	Authored and reviewed the study