Analysis on risk factors associated with stillbirth in a tertiary care centre

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Abstract :
Objective To analyse the risk factors associated with stillbirth and percentage of stillbirth reported in a tertiary referral-teaching centre for 1 yr.Design Descriptive studySetting Tertiary referral teaching hospitalMethods Retrospective study of stillbirth among deliveries conducted at a tertiary referral medical college hospital from June 2009 to May 2010. Stillbirths are classified according to ReCoDe classification of stillbirth. Probable causes and risk factors associated with stillbirth were identified.Results Still birth rate is 20.7 per 1000 live birth of which 22 (55)are fresh stillbirth and 18(45) are macerated birth. Among the stillbirth 72.5 (29 cases) were nulliparous and 27.5 (11 cases) were multiparous women. Stillbirth is seen more in pre term. Cause of death is broadly classified and fetal, placental and maternal ranks in descending order. Risk factors like prematurity, pre eclampsia, DM, oligohydramnios, abruptio placenta were identified to play a role in stillbirth.Conclusion 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. Diabetes, hypertension, and a history of placental abruption also carry higher rates of recurrent fetal loss. thus proper antepartum and intrapartum care can reduce the still birth which inturn reduces the perinatal mortality rate.

Keyword :still birth, teaching hospital, ReCoDe classification, pre eclampsia, perinatal mortality

BACKGROUND

The grief of a stillbirth is unlike any other form of grief: the months of excitement and expectation, planning, eager questions, and the drama of labour—all magnifying the devastating incomprehension of giving birth to a baby bearing no signs of life. For the study, the researchers employed the definition of stillbirth by WHO, which terms any unsuccessful delivery after 28 weeks of pregnancy a stillbirth. Lancet's stillbirth series revealed on an average, six lakh stillbirths take place in India

every year (22 stillbirths per 1,000 births)[2] . In our study still birth rate is 20.7 per 1000 live births. 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 stillbirths.

Our goal in this study was to determine the stillbirth rate and thereby assessing the magnitude of the problem, exploring the risk factors for stillbirth and its possible causes and recommends remedial measures to be adopted in an attempt to reduce stillbirth rate in our facility.

Methodology:

This was a retrospective study conducted in the department of OBG in a tertiary referral medical college hospital in Tamilnadu. The study population were cases of still birth occurred between June 2009 to may 2010 for a period of 1 yr. There was totally 1926 birth among which 40 cases were still birth.

All relevant history, risk factors, investigations, and other antenatal investigations available were noted. The modes of delivery, intra partum complications, sex and birth weight of fetuses, placental weight were recorded. The babies were examined for any congenital anomalies and placentae were examined for any retroplacental clots and any other abnormalities. Autopsy was performed where parents gave consent. If an obvious cause of death was not found, stillbirth was usually considered unexplained. Age, parity, gestational age, presenting complaints were analysed. Among the 40 cases of stillbirth, percentages of fresh and macerated stillbirth were identified. Cause of death is classified by ReCoDe classification of death. This system seeks to identify the condition(s), which existed at the time of death in-utero. This classification emphasizes what went wrong, not necessarily 'why'. Hence, more than one category can be coded. The hierarchy starts from conditions affecting the fetus and moves outwards,

in simple anatomical categories (A-F), which are subdivided into pathophysiological conditions. The primary condition should be the highest on the list that is applicable to a case. ReCoDe (relevant condition at death) classification enabled 85% of cases of stillbirth to be assigned a relevant condition, leaving only 15% as unclassified or unexplained. [4]

Results:

During this period total number of deliveries was 1926 out of which 40 cases were stillbirth. Still birth rate was 20.7 per 1000 live births compared to Indian standards 22 per 1000 live births and globally 19 per 1000 live births given in a lancet study 2011. Among the 40 cases, 22 (55%) cases were fresh stillbirth and 18 cases (45%) were macerated stillbirths. Stillbirths that occur more than 12-24 hours prior to delivery result in maceration of skin, while those occurring in the intrapartum period or immediately prior to delivery are generally normal in appearance and areoften called fresh stillbirth. Around 50% cases presented with reduced or loss of fetal movement.[3]

The age distribution of the patients,15%(6 cases) were <20yrs ; 75% (20 cases) were 21- 30 yrs and 10% (4 cases) were >30 yrs. Among 40 stillbirth the parity was analysed, nulli parity and multi parity was analysed. 29 cases (72.5%) were nulliparous and 11 cases (27.5%) were multi parous women. One among 40 cases was a grand multiparous. As other studies state primiparity was associated with more number of stillbirth.
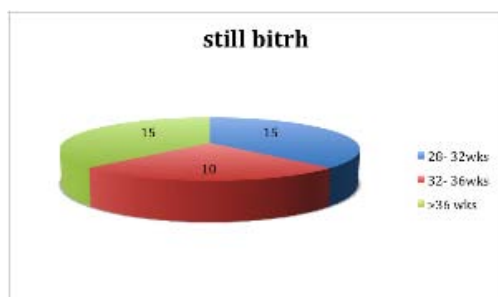
Around 62.5%(25 cases) were referred from outside and 37.5% (15 cases) were booked with us. In this study the gestational age at which still birth occurred after 28 wks is divided into 3

categories as 28-32 wks; 32 -36 wks and more than 36 wks. On analyzing prematurity was found to be associated with stillbirth. Stillbirth was classified according to ReCoDe classification. Around 25 cases had placental autopsy done among total 40 cases.
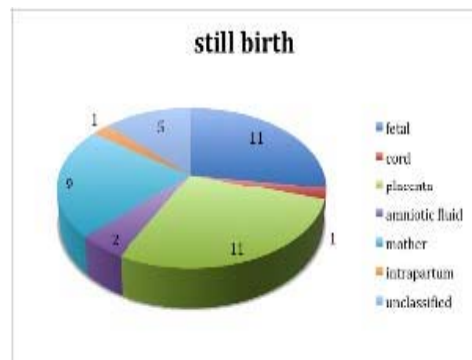
Fetal cause was seen in 11 cases (27.5%) among which 5 cases were due to fetal anomaly, 5 cases were due to fetal growth restriction and one was due to fetal infection. Fetal deaths due to congenital abnormalities have declined significantly over the past few decades. The use of ultrasound screening and other techniques for identifying congenital anomalies has become widespread and termination of pregnancy is likely to have contributed to the observed reduction in late fetal death. Studies suggested that growth restriction may be an important factor in a significant proportion of fetal death as much as 40.0% of currently classified as unexplained death. One major difficulty is in establishing a clear definition of IUGR. In fact the risk of still-birth increases with declining percentile of birth weight.[5]One case which was found to be infection had fetal ascites and signs of skin peeling at birth which are the signs of fetal infection and also mother had a viral infection a week prior to delivery. Placental cause was seen in 11 cases (27.5%)

as like of fetal cause. Due to availability of placental autopsy even one of the rarest cause placental chorioangiosis was detected. Autopsy plays a more important role in classification of stillbirth as many number of cases which had a initial diagnosis of unclassified is classified after placental autopsy. Hence the cause should be diagnosed in certain cases before autopsy. Among 11 cases, abruption was seen in 8 cases and chorioangiosis in 1 case and placental villitis in 2 cases. In 8 cases of abruption 6 were associated with pre- eclampsia and 1 case with HELLP. Maternal cause was seen in 9 cases (22.5%), among which preeclampsia seen in 5 cases, diabetes mellitus in 2 cases ans antiphospholipid antibody positive in 2 cases. Among the preeclampsia 3 were severe and 2 were mild. When there is clinical evidence that a woman with GDM may have undiagnosed type II DM, she should be considered to be at increased risk of stillbirth. The exact glycemic threshold that places a diabetic pregnancy at increased risk for stillbirth is not well characterized. Hypertension and diabetes, both risk factors for stillbirth, are two of the most common medical conditions that occur along with pregnancy. Research indicates that women who have diabetes prior to pregnancy have a two- to five-fold increased risk of stillbirth. 5%(2 cases) of stillbirth is due to amniotic fluid volume, 1 case had severe oligohydramnios and the other had anhydramnios. 2.5%(1 case) is due to intrapartum asphyxia and 2.5% (1 case) is due to umbilical cord entanglement. In 12.5% (5 cases) cause could not be identified hence classified under un classified group. Among 5 cases 3 did not have placental autopsy and 2 cases had calcification and vascular under perfusion without any ante natal complications. Even that cases could have been analysed if autopsy done.

Conclusion:

A babys death however or whenever it occurs is a profound loss. A lot of effort is devoted to investigate risk factors and causes of stillbirth. Although this was a small Hospital – based study, the result reflects current obstetric experience in tertiary centre. It is to some extent a preventable disorder. Diabetes, hypertension, and a history of placental abruption also carry higher rates of recurrent fetal 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 scorring system in the III trimester and lastly. [6] An autopsy is a very important step in clarifying the exact cause of infant death and action to encourage clinicians and parents to view autopsy in a positive light is urgently needed. Increased monitoring for women with pre-eclampsia might be helpful in reducing the number of stillbirths. Women who have suffered from abruptio placentae or the HELLP syndrome are likely to experience recurrence in subsequent pregnancy; these women should be carefully monitored. The occurrence of an intrapartum stillbirth in developed country is considered the result of inadequate care[7] whereas in developing country it may represent inadequate access to essential obstetric care and inadequate care.[8]The staggering high rate of stillbirths is also related to poor education, lack of awareness of available health facilities, regular antenatal check-ups, early detection of pregnancy complications and proper monitoring by skilled provider during labour and timed referral in higher centers.

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