Stillbirths; A National Health Crisis Needing Immediate Attention!!

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ABSTRACT

Background: Stillbirth is common with 1 in 200 babies born dead. The stillbirth rate has remained generally constant since 2000. In addition to physical effects, stillbirth often has profound emotional, psychiatric and social effects on parents and family. **Objective:** To study the maternal and fetal risk factors related to stillbirth. **Study Design:** It was a retrospective audit of stillbirths. **Settings:** Department of obstetrics and gynecology unit-III, Jinnah hospital Lahore. **Duration:** Two years from January 2014 to December 2015. **Methodology:** A total of 322 patients who had stillbirths $\geq$ 28 weeks of gestation were included in the study. Information regarding patient's demographic data, antepartum and intrapartum events was recorded on specially designed proforma. **Results:** Mean maternal age was 27.1$\pm$ 5.3 years. Un- Booked cases constituted 73.2 % (n=236) while 26.7% (n=86) were booked. Mean gestational age was 33.6 $\pm$ 3.6 weeks while mean birth weight was 2.26 $\pm$ 1.1 kg. Frequency of male stillborn was higher i.e., 51.53% (n=168) than females i.e., 48.4% (n=158). Fetal hydrops was there in 1.24% (n=4) cases while 2.1% (n=7) had gross congenital anomalies. Breech presentation was there in 3.72% (n=12) and 2.48% (n=8) had neglected transverse lie. No cause could be identified in 22.3% (n=72) of cases. Preterm delivery occurred in 66.77% (n=215) while 21.4% (n= 69) had Pre-prom. Hypertension could be identified in 24.5% (n=79) of cases while 16.4% (n=53) had placental abruption. Low birth weight was noted in 54.3% (n=175) while inadvertent use of oxytocic drugs was there in 23.6% (n=76) cases. **Conclusion:** Most of the stillbirths are avoidable and can be prevented by comprehensive and accessible health care to all women before and during the pregnancy and labor.

Keywords: Stillbirth, Risk factors, Preterm labor.

INTRODUCTION

Still birth at any point of pregnancy is a key issue in public health which is often ignored and has not been given the due attention. The event of stillbirth is extremely painful for the mother, family and the attending doctor.[1] Intrauterine fetal demise (IUFD)is defined as death in utero after 24 weeks and still birth as a baby delivered after 24 weeks of gestation without any signs of life however WHO refers still birth to a baby born with no signs of life at or after 28 weeks gestation.[2,3]

There is a variety of factors effecting the rate of stillbirths but the biggest correlation is with maternal approachability to the health facilities. The issue of maternal and neonatal deaths have been addressed partly under the Millennium Development Goals but stillbirths remained an inaudible public health problem.[4]

The contribution of still births to perinatal mortality is remarkable with a widely variable rates well corresponding with the level of health care facilities available. Moreover, the definitions used for stillbirths and IUFD may also vary in different settings although underreporting of the problem is common especially in third world countries.[5]

Labor complications, maternal infections, maternal medical disorders especially hypertensive disorders and diabetes mellitus, fetal growth restriction and congenital abnormalities are the major contributors to stillbirths.[6] The majority of stillbirths are preventable and improvement in the fetal outcome is possible by providing adequate health care to the pregnant women.[7] About 3.2 million stillbirths occur each year globally and 2/3rd of these do occur in developing countries of Asia and Africa.[8] Intra partum period is of paramount importance as the time of highest risk because nearly half of all stillbirths occur during this period globally. In developed world, the picture is entirely different as only 14% of third-trimester deaths occur in intra partum period.[9,10]

Unfortunately, Pakistan has the highest stillbirth rate in the world (43.1/1000 births) during the year 2015 even higher than the Sub-Saharan Africa.[11] Recognizing the causes of IUFD and still birth can be an effective method

for the prevention. It will help in estimation of recurrence and future pre-pregnancy, antenatal and intra partum care. This study was undertaken to identify various causes and risk factors of stillbirth.

METHODOLOGY
Study Design: It was a retrospective audit.
Settings: Department of Obstetrics and Gynecology Unit-III, Jinnah Hospital, Lahore Pakistan.
Duration: Two years from Jan 2014 to Dec 2015.
Sample Technique: Non probability consecutive sampling.
Sample Size: A total of 322 patients were included in the study after fulfilling the inclusion criteria.
Inclusion Criteria: All the patients who had still births confirmed on ultrasound were included in the study.
Exclusion Criteria: Patients who had pregnancy loss before 28 weeks were excluded from Study.
Data Collection Procedure: The data was collected from the birth record registers. For the purpose of study, still birth was considered as a baby delivered at or after 28 weeks of gestation without any signs of life. Data was collected on especially designed proforma attached hereby. Information regarding patient's age, gestational age, parity, booking status, hypertension, eclampsia, diabetes mellitus, premature rupture of membranes, intrauterine growth restriction, placenta previa, placental abruption, hydrops fetalis, gross congenital anomalies, malpresentation, multiple pregnancy, inadvertent use of oxytocic drugs outside the hospital, Ruptured uterus, peri-partum hysterectomy, complications of labor, cord prolapse, mode of delivery and indication for cesarean section were recorded in the proforma for each case and entered into SPSS-19. Descriptive statistics were used to calculate percentages for each of the above demographic and clinical variable.

RESULTS
The mean maternal age was 27.1± 5.3 years. Un-booked cases were 236 (73.2%) while 86 (26.7%) were booked. Male constituted 51.53% (n=168) of stillborn while 48.4% (n=158) were females. Mean gestational age was 33.6 ± 3.6 weeks while mean birth weight was 2.26 ± 1.1 kg. Fetal hydrops was there in 4 (1.24%) cases while 7 (2.1%) had gross congenital anomalies. Twin gestation was there in 4 (1.24%) and a similar percentage had postdated pregnancy. Breach presentation observed in 12 (3.72%) and 8 (2.48%) had neglected transverse lie. Shoulder dystocia was encountered in 2 (0.6%) cases and three (0.93%) had cord prolapse. No cause could be identified in 72 (22.3%) of cases. Cesarean sections for various reasons were performed in 69 (21.4%) which included major degree placenta previa (n=10), primary dysfunctional labor (n=7), secondary arrest of cervical dilatation (n=8), obstructed labor (n=4), neglected transverse lie (n=8), previous abdominal delivery (n=5),

cord prolapse (n=1) massive placental abruption (n=12) and uterine rupture (n=16). Various other significant risk factors are shown in the figure 1.
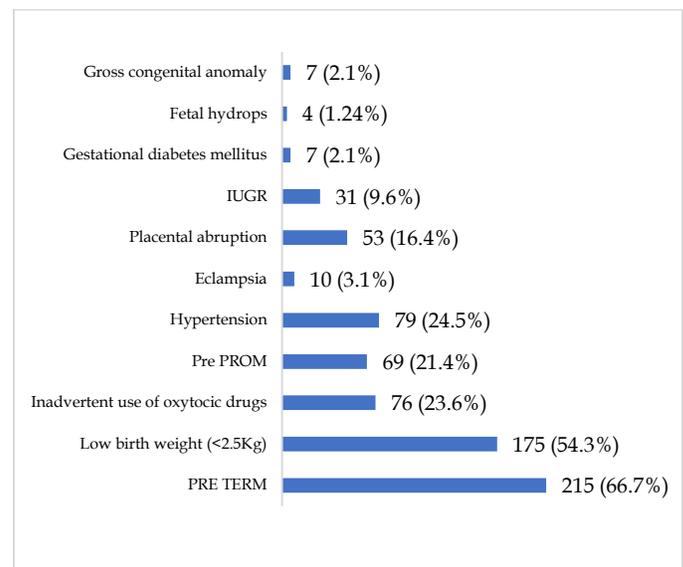
Figure 1: Identified risk factors for IUFD and stillbirth

Table 1: Comparison of risk factors between booked and un-booked cases

Risk factor	Total (n=322)	Booked (n=86)	Un-booked (n=236)	P-value
Pre-term	215	67	148	0.01
Pre-prom	69	19	50	0.861
Hypertension	79	20	59	0.748
Eclampsia	10	2	8	0.626
Placental abruption	53	10	43	0.158
IUGR	31	6	25	0.33
Gestational diabetes mellitus	7	3	4	0.329
Fetal hydrops	4	2	2	0.289
Gross congenital anomaly	7	3	4	0.329
Inadvertent use of oxytocic drugs	76	3	73	0.0001
Low birth weight (<2.5Kg)	175	55	120	0.037
Hysterectomy	6	1	5	0.575
Ruptured Uterus	16	3	13	0.46
Obstructed Labor	4	0	4	0.224

DISCUSSION

Still birth rate is among the WHO'S 100 core health indicators and a sensitive cursor of quality and parity of a health care system. The overall still birth rate was 24.7/1000 total births during 2000 which is 18.4/1000 total births in 2015 with a very sluggish annual decline of 2%. Still births are of major concern not only in low- and middle-income countries but also for the high-income nations. Although a very important issue but failed to collect the due considerations in strategic planning especially in the third world areas.[11,12]

About 98% of still births occur in low to middle income countries. The situation is alarming in Pakistan and certain other African and south Asian countries. This must be an eye opener for the health care authorities. This burning issue needs interventions not only during pregnancy and labor but also before conception. Another very important angle in relation to reducing the still birth rate is women empowerment through educating the women of the society specifically and to the masses generally as it has been seen that 60% of the still births occur in low resourced and less educated rural areas of the world.[13,14]

More than 40 million women deliver at home each year. Major equity gaps exist for coverage of intra partum care especially for home births and needs urgent attention to train the home birth attendants.[15] Still birth has a tremendous psychological and financial impact to the parents and to the country. Pain of the mother and family is aggravated by anathemas and degradation as well. About 4.2 million women are living with depression associated with a previous still birth.[16]

During the two-year duration, total births were 11,122. The still birth rate was calculated as 28.9/1000 births. In the current study, mean gestational age at delivery was 33.6 $\pm$ SD and majority of patients delivered preterm i.e 215 (66.77%). This finding was consistent with those presented by Avachat SS *et al*.[17] Most of the patients in our study were un-booked i.e., 236 (73.2%) which is comparable to the study conducted by Safarzadeh A *et al* and Al-Kadri *et al*. This finding clearly highlighted the absence of antenatal care mainly due to inaccessibility of adequate care for pregnant mothers.[6,18] Placental abruption was a cause of stillbirth in 53 (16.4%) of cases in our study. This finding of our study is in accordance with the one conducted by Ntuli ST *et al* and Iqbal M *et al*.[19,20]

79 (24.5%) patients in our study had hypertension while eclampsia was there in 10 (3.1%) patients. Our findings are supported by those of Chaudhary A *et al*.[1] Ntuli ST *et al* also reported the frequency of hypertensive disorders as 22% and gestational diabetes mellitus (GDM) as 3% in their study.[10,17] GDM was seen in 7 (2.1%) of patients in our study. Fetal hydrops was seen in 4 (1.24%) cases. Chaudhary A *et al* reported this risk as 1.95%.[1] Congenital abnormalssities were there in 7 (2.1%) our study whereas

this figure was 10.48% in the study conducted by Chaudhary *et al*. The difference may be explained on different levels of detection of anomalies at two different settings as that study was conducted at hilly areas of Uttarakhand India. Low birth weight (LBW) was seen in 175 (54.3%) of cases while macrosomia (birth weight $\geq$ 4kg) was noted in 13 (4.03%) cases. These findings are consistent with the study conducted by Avachat SS *et al*. Majority of stillborn were male making 168 (51.53%) while 158 (48.4%) were females. The difference was not significant as observed by Tamrakar SR *et al* as well.[3] The percentage of unexplained still births was 72 (22.3%) in our study. Avachat SS *et al* reported this to be 34% while Chaudhary A *et al* quoted it as 19.05%.[1,17]

Another important risk factor which needs to be highlighted is inadvertent use of oxytocic drugs and mishandling of the patients by untrained birth attendants at home before coming to hospital. This history was present in 76 (23.6%) cases. Obstructed labor was there in 4 (1.24%) due to such interventions with its own risks and complications. Uterine rupture was encountered in 16 (4.96%) and among those, 12 (3.7%) faced it after trial of labor at home in the peripheral poorly developed areas while rest of 4 had it due to rupture from previous scar of uterus. Peri-partum hysterectomy was needed to be performed in 6 (1.86%) and 5 out of them were due to ruptured uterus. These findings are sufficiently significant to be dealt immediately and efficiently in the national health policies and programs.

It's the need of time to decrease the still birth rate which not only requires serious and honest national health policies but also an efficient system to monitor the impact and progress of various ongoing programs.

CONCLUSION

Most of the stillbirths are avoidable and can be prevented by comprehensive and accessible health care to all women before and during the pregnancy and labor. This must also include training of traditional birth attendants as majority of births do occur at home in Pakistan.

LIMITATIONS

Current study is not without its limitations as it's a hospital-based research which can only depict tip of the iceberg of stillbirths in the community as a whole.

SUGGESTIONS / RECOMMENDATIONS

There is a need of further community-based researches to look into the causes and risk factors related to this huge problem in further detail. More over there is a definite need to have testing for chromosomal abnormalities and placental histology in future researches.

CONFLICT OF INTEREST / DISCLOSURE

No Conflict of interest is involved.

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