Original Research Paper

Gynaecology

STILLBIRTH-EVALUATION OF CAUSES AND IMPACT ON MATERNAL HEALTH, A TERTIARY CENTRE STUDY IN NORTH INDIA

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ABSTRACT

Introduction : A systematic evaluation of the circumstances and associations with stillbirths may assist in investigations that could lead to preventive strategies.

Objectve: To study maternal and fetal variables associated with stillbirth and impact on maternal health.

Method: This is a retrospective study of 1056 fetal deaths in 5 year period .Data was collected from hospital record.

Results: Majority of patients belonged to rural area, with lower socioeconomic strata,unbooked , not accompanied by ASHA. The most common factors related to fetal deaths were Preclampsia ,placenta previa and low birth weight.

Impact on maternal outcome was also noted .

Conclusion: Most of the causes are preventable . Health schemes needs to strengthen better antenatal services.

KEYWORDS : Fetal death; stillbirth; risk factors

INTRODUCTION

A pregnancy loss is extremely devastating for the expectant parents ,obstetrician and society . Still birth not only affects emotionally(depression),but also financially in the form of funeral costs , loss of earnings due to time off work,reduced productivity[1]. Health care provider experience guilt, anger, blame, anxiety, and sadness as well as fear of litigation and disciplinary action[2].

India ranked first among 195 countries in 2015(Stillbirth rate was 23)[3].Thus it's high time to pay attention to this highly neglected area.

The definition of stillbirth recommended by WHO for international comparison is a baby born with no signs of life at or after 28 weeks' gestation.[5]

Sociodemographic factors include poverty, lack of education, pre-pregnancy obesity, lack of antenatal care, smoking .[6-8]Maternal causes are ; Prolonged pregnancy, diabetes, hypertension, infection, preeclampsia, advanced maternal age, hemoglobinopathy, Rh incompatibility, uterine rupture, previous history of abortion and intrauterine fetal death. Fetal causes are ; Multiple gestations, congenital abnormality, genetic abnormality, infection and Placental causes include ; Cord accident, placental abnormalities, and premature rupture of membranes[9-14]. Still 50% of stillbirths remain mystery.

METHODS

Setting

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Design

Retrospective hospital based study fetal deaths that occurred during January 2014 and December2018.Data was collected from the hospital record , delivery register , fetal death proforma form and Neonatal mortality meeting summaries to ascertain the possible causative factors of fetal death.

Selection criteria

A case of fetal death with gestational age 28weeks or fetal weight 500gm. Multiple pregnancy was excluded.

Statistical study

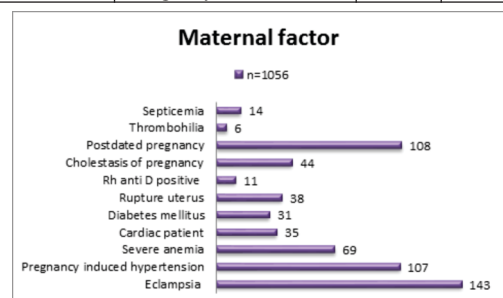Data were tabulated and analysed as percentages

RESULTS

The total number of deliveries during the study period were 18027 and 1056cases were taken up for analysis. The still birth rate was 58 per 1000 live births.
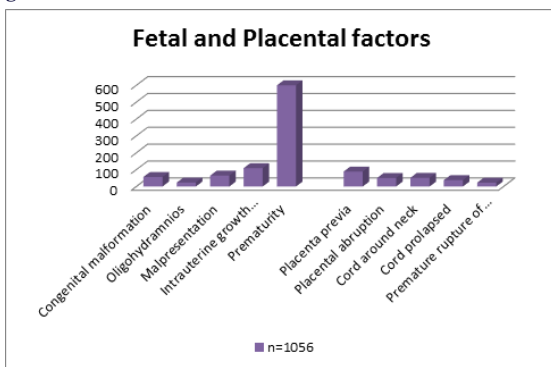
Stillbirth with no risk factors was 245 (23.2%). Single factor in 317(30%) and two or more risk factors were detected in 494(46.78%).

Antepartum stillbirths were 910(81.17%) and intrapartum were 211(18.8%) Mode of delivery was vaginal in 67.61% of mothers and the remainder were operated(304 caesarean and 38 laparotomies for rupture uterus). 42 caesarean hysterectomies were done for irreparable rupture uterus , intractable postpartum haemorrhage, Placenta Accreta, increta, percreta .(Table1)

Table1.Sociodemographic details (n=1056)

S.N.	Characteristics	Number	Percentage
1.Age	<20 years	83	7.86
	20-35 years	957	90.6
	>35 years	16	1.51
2.Parity	Primi	411	38.92
	multi	434	41.09
	grandmulti	211	19.98
3. Gestational age	28-34weeks	423	40
	34-37weeks	177	16.76
	37-40 weeks	348	32.9
	>40weeks	108	10.22
4. Habitat	Rural	686	64.96
	Urban	370	35.04
5.Education	Illiterate	581	55.01
	Just literate	214	20.26
	Primary education	164	15.53
	Higher education	97	9.18
6. Socioeconomic status	Below poverty line(BPL)	221	20.92
	Lower(excluding BPL)	456	43.18
	Middle	314	29.73
	Upper	65	6.15
	History of adverse perinatal outcome	44	4.16
8. Antenatal booking	Booked	297	28.12
	Unbooked	759	71.87
9. ASHA	Brought by ASHA	425	40.24

Maternal factor (n=1056)

Septicemia 14
Thrombohilia 6
Postdated pregnancy 108
Cholestasis of pregnancy 44
Rh anti D positive 11
Rupture uterus 38
Diabetes mellitus 31
Cardiac patient 35
Severe anemia 69
Pregnancy induced hypertension 107
Eclampsia 143

Figure 1. Maternal risk factors of stillbirth

Figure 2. Fetal and Placental factors of stillbirth

Details of postdelivery condition was noted to find out association of stillbirth with maternal health. 40 .6%of patients had pyrexia (≥100F), 15.9% had gaped wound, (four patients had burst abdomen),67.4% faced postpartum depression (2.4% suffered postpartum psychosis), 3.9% were lost their fertility permanently because of hysterectomy, 2.17% had acute renal shutdown and needed dialysis ,35.79% needed higher antibiotics , 46.3% required blood transfusion(2 had blood transfusion reaction) , 32.1% had to stay in hospital for long time. 16.19% were intubated ,10.22% were on ventilator , 28.59% patients were in ICU care. Out of 1056 , 78 patients succumbed to death.

DISCUSSION:

Stillbirth not only indicates health of mothers but also availability and accessibility of healthcare delivery system .

In the present study stillbirth rate was 58 (1056/18027) which is extremely higher than developed countries[3,12] and slightly higher than Indian studies[7,15,16,17,18] .Better health delivery system is available in developed countries .

In our study illiteracy rate was 55% which is less than study conducted by S B Neogi(70%)[8] . This could be regional difference. Illiteracy is root cause which leds to ignorance,myths ,carelessness about health ,underutilisation of health services. Poverty is another big culprit of poor health status of females and responsible for stillbirths[3,18] (Susmita et al 71.2%). Majority of the patients belonged to rural area (64.96%) similar results obtained by Susmita et al[18] (58%).Majority were u n b o o k e d (7 1 . 8 7 %) is in accordance with other studies[7,15,18].Government of India has launched many health schemes for maternal and child health improvement like introduction of ASHA. But majority were not accompanied by ASHA (59.75%). Education,poverty alleviation and family planning can help reduce risk factors and improve mother and baby outcome.

The highest number of cases (90.6%)were in the age group of 21-35 years which is in accordance with Avachat ss et al[16] (75.16%). The advanced maternal age(>35 years) was found in only 1.51% of patients which is in contrast to western studies[11]. Pregnant woman of advanced age is not common in our society particularly in rural area.

The majority of patients were primigravida 38.92% similar results reported by Anjali et al[7] (40.6%),. Grandmultiparity was found in 19.98% similar to other studies[7].

Woman with past history of adverse perinatal outcome was 4.16% which is slightly less than Susmita et al[18] study(9.2%).

In present study 81.17% were antepartum stillbirths while intrapartum stillbirths were only 18.8% which is in contrast to the lancet series[11]. This could be explained because centre is tertiary care centre.

67.61% had vaginal delivery ,28.78% were operated . 3.59% had laparotomy for rupture uterus and 3.97% landed up in caesarean hysterectomy .Similar results were found in other studies.[18]

Hypertensive disorder of pregnancy including eclampsia (26.79%) was the leading preventable maternal risk factor. Other studies have reported similar finding [16,18](28.6%, 33.7%). Severe anaemia was found in 3.33% cases where as much higher incidence reported by. Patel et al[15](11.2%) and Anjali et al[7](15.24%). Case of stillbirth due to

syphilis and Rh isoimmunisation was not found. .Rest of the maternal factors as stated in figure1were in accordance with other studies [7,15,16,17,18]. It is obvious that all stated causes are preventable with improved antenatal care.

Among placental risk factor was antepartum haemorrhage 12.2%. which was higher reported by Avachat et al [16](32%) and Helgadottier LB [10](68%).

Amongst fetal causes prematurity accounted for ,IUGR, Malpresentation ,Congenital anomaly and oligohydramnios . Similar results found in other studies.[15,16]

Many stillbirths are unavoidable due to congenital abnormalities . Congenital malformation of fetus can be diagnosed by ultrasonography in early pregnancy and medical termination of pregnancy can be performed. So anomaly scan can significantly contribute to reduce the burden of stillbirth thus antenatal booking is very important.

Stillbirth without maternal or fetoplacental risk factors was 23 %. Single risk factor was found in 30% and multiple risk factor was found in 46.78% .Similar results found in other studies [16,18].

Maternal health was severely affected in form of postpartum pyrexia gaped wound, longer duration of hospital stay,, postpartum depression [11] , need of higher antibiotic ,need of blood transfusion,loss of fertility permanently , need of intubation, ICU care, need of ventilator, acute renal shutdown , need of dialysis and maternal death similar result found by Patel et al [15].

Autopsy might have revealed cause of death in some of the cases. There are few limitatation at our centre like lack of facility of fetal autopsy, genetic laboratory tests to diagnose thrombophilias.

CONCLUSION

As per *Lancet studies[11]* there will be triple return on investment in stillbirth prevention (prevention of newborn , maternal death and loss of income of bereaved parents).

We have to double present pace of progress to reach this target.

More efforts must be done to integrate stillbirth prevention within global and national agenda. Majority of woman were from rural background and belonged to lower socioeconomic section of society.These maternal disorders can be detected early and properly managed through antenatal care services. So the issue of availability and accessibility of adequate antenatal care for the socioeconomically poor patients have to be ensured.

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