Subscription Agency
Exploring and Distributing Knowledge Globally

Indian Journal of Obstetrics and Gynaecology
Volume 1 Issue 2

Still Birth, Can It Be Preventable?

Akshatha D S[1], Veena M Vernekar[2], Prashanth F G[3], Pooja P[4], Razia Begum[5], Pavithra R[6], Sreelatha S[7]*

[1,2,3,4,5,6]Junior resident, [7]Professor, Department of Obstetrics and Gynecology, ESIMC PGIMSR, Rajajinagar, Bangalore, Karnataka, India

***Corresponding Author**

Email Id: dr.sreelatha2011@gmail.com

ABSTRACT

Background: *Still birth is one of the major adverse pregnancy outcome which leads to psychological trauma for the pregnant women and her relatives. The aim of the study is to analyze the incidence, risk factors and management of still birth.*

Objective: *To study the incidence, risk factors and management of still birth.*

Methods: *It is a retrospective study conducted at ESIC-PGISMR Bangalore from January 2018 to December 2020. All pregnant women diagnosed to have still birth during this period were included in this study.*

Results: *The total numbers of cases were 67 out of 9260 deliveries in that period. The incidence of still birth in this study is 0.72%. Majority were primigravida (5.22%) of the age group 21-30years(73.1%), majority belongs to gestational age 28-34 weeks (28-34%) , most of them delivered vaginally (91.1%), majority were low birth weight babies1kg (47.7%) and majority of the patients were gestational hypertension(25.3%), thyroid diseases(13.3%), gestational diabetes mellitus(7.4%), abruptio-placentae (7.4%), Rh-negative pregnancy(5.9%), multiple-gestation(4.4%), oligohydramnios(4.4%), anomalies(4.4%), cardiac diseases(4.4%), preterm-premature rupture of membranes(2.9%), anemia(2.9%) , intra-uterine growth restriction (1.4%),unknown cause(31.3%) and in this many babies were having cord around the neck(10%).*

Conclusion: *Multiple risk factors are responsible for still birth hence primary prevention is to identify those maternal risk factors and treat them as early as possible.*

Keywords: *Still birth, gestational hypertension, thyroid diseases, low-birth weight babies.*

INTRODUCTION

Still birth is one of the major adverse pregnancy outcome which leads to psychological trauma for the pregnant women and her family. Still birth is death of the fetus, irrespective of the period of gestation, and which is not an induced termination of pregnancy. The death is indicated that fetus does not breathe or show any other evidence of life such as heart beat, pulsation of the umbilical cord or definite movement of voluntary muscles after expulsion or extraction. Heart beats are to be distinguished from transient cardiac contractions; respirations are to distinguished from fleeting respiratory efforts or gasps [1].The definition varies widely in different countries. In India, a fetus of ≥20 weeks of gestation or weight of ≥500 g when gestational age is not known,with no sign of life is considered stillborn [2].

The national center for health statistics, USA divides fetal death into three categories.
Early - <20 weeks
Intermediate - 20-27 weeks
Late - ≥28weeks

Globally, 2.6 million stillbirths occur each year [2]. The highest burdens of stillbirth are seen in the sub-Saharan Africa and southern Asian regions. 60% of still births are from rural areas where with limited healthcare services are available and majority are intra-partum still births. India has the highest number of still births. India is among top 10 countries with the highest still birth numbers, with still birth rate of 23.3 per 1000 births in 2015. [Still Birth Rate (SBR) is the number of still births per 1000 total births, which include live birth and still birth]. There is wide variation of Still Birth Rate in different states ranging between 20 to 66/1000 births [2].

Approximately 3.2 million stillbirths occur annually in low- income and middle-income countries [3].

The risk factors associated with still births can be maternal, fetal, obstetric or associated medical disorders.

1) Maternal: advance maternal age (>35years), obesity, race, socioeconomic status, low educational status, smoking.
2) Fetal: congenital malformations, male sex.
3) Pregnancy complications: intrauterine growth restriction, pregnancy induced hypertension, placental abruption, Rh ISO immunization, multiple pregnancy, post term pregnancy, infections, antepartum asphyxia, previous history of still birth, nuchal cord or knotted cord.
4) Medical disorders: diabetes, hypertension, chronic nephritis, systemic lupus erythematosus, thrombophilias, cholestasis of pregnancy.

The most important in the evaluation of a still birth are fetal autopsy, examination of the placenta, cord, and membranes and also karyotype evaluation. About 20% of fetal deaths remain unexplained despite adequate evaluation [4]. Spontaneous labor usually ensues after intrauterine death in 80-90% women within two weeks. It is quite rare that, there is a risk of stillbirth in patients who undergo spontaneous labor. However, in large majority of patients due to psychological and social pressures labor has to be induced.

MATERIALS AND METHODS

This is a retrospective observational study from January 2018 to December 2020 in The Department of Obstetrics and Gynaecology, ESIC Medical College PGIMSR Bengaluru.

All pregnant women diagnosed to have still birth during this period were included in this study. We retrieved data from the still birth register and the case files pertaining to maternal demographic profile such as age, parity, risk factors-hypertension, gestational diabetes mellitus, intra uterine growth restriction, Rh isoimmunisation *etc*, mode of delivery, birth weight were recorded. Data was analyzed using SPSS version 24.

Inclusion Criteria

All pregnant women diagnosed to have still birth during the period from January 2018 to December 2020 in the Department of Obstetrics and Gynaecology, ESIC Medical college PGIMSR Bengaluru were included in this study. There were a total of 67 cases.

Exclusion Criteria

Cases were excluded if gestational age <20 weeks.

AIMS AND OBJECTIVES

1) To determine the incidence of still birth.
2) To identify the risk factors contributing to still birth.

RESULTS

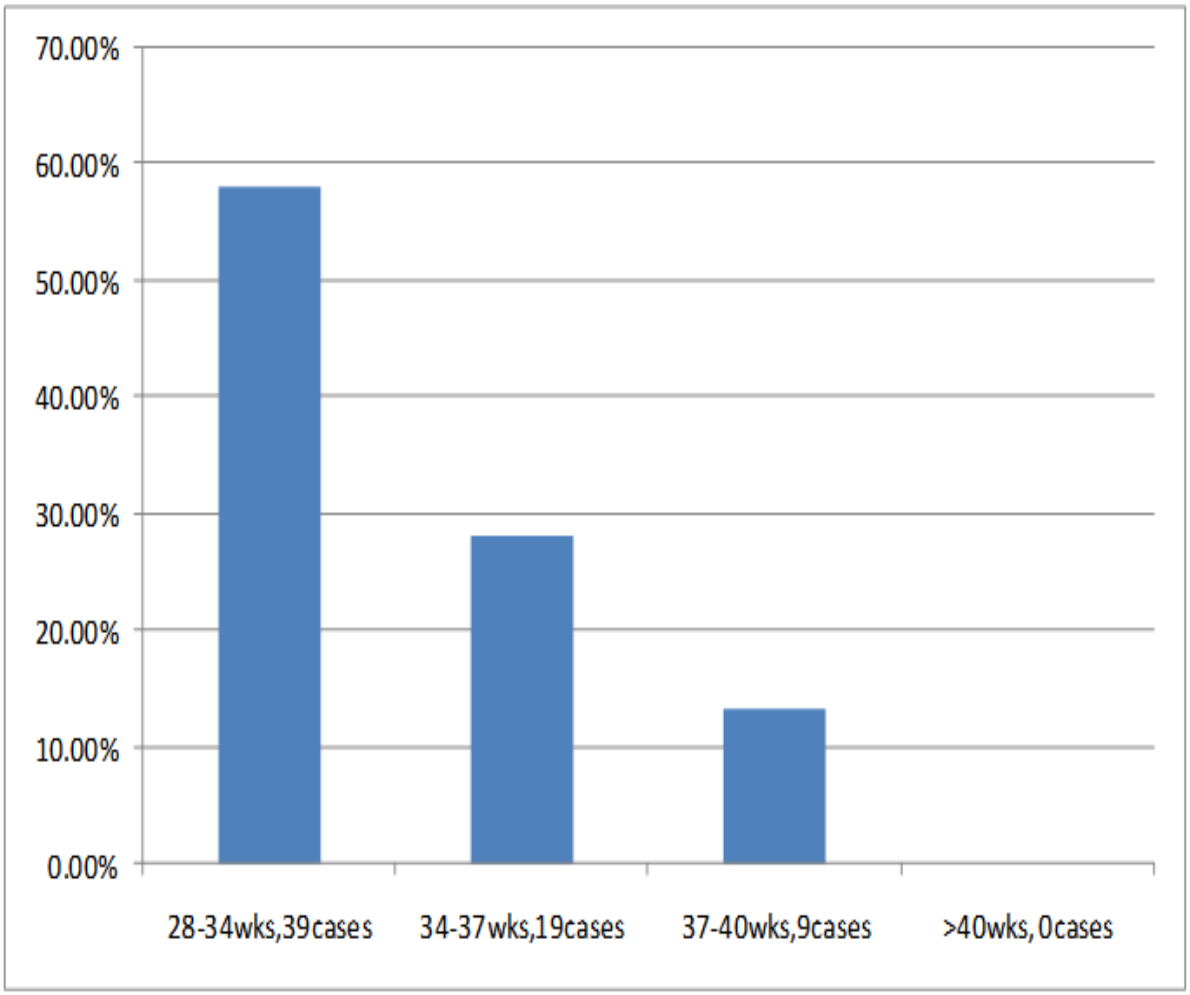
The total number of deliveries during the study period was 9260 which included 67 still births accounting for an incidence of 0.72%. Still birth rate in the present study is 7.23/1000 live births.

Majority of women were of the age group 21-30 years (73.1%). 55.22% were primigravida and 44.7% were multigravida. Majority were belongs to gestational age group of 28-34 weeks (58.2%).

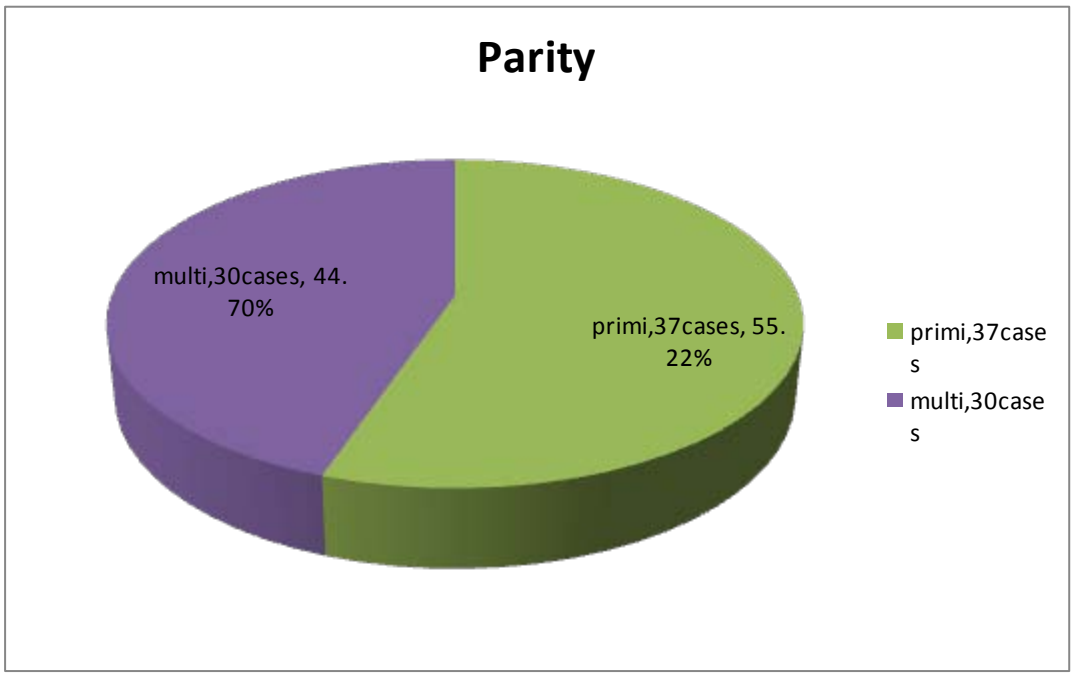
Table 1: Still Birth in Relation to Age Group

Age(years)	Number of cases	Percentage%
<20	2	10.8
21-30	49	73.1
31-40	16	23.8
>40	0	0

Graph 1: Distribution of Cases According to Gestational Age



Graph 2: Distribution of Cases According to Parity



Risk factors includes majority of pregnancy induced hypertension(25.3%), thyroid diseases (13.3%), gestational diabetes mellitus (7.4%), abruptio-placentae (7.4%), Rh-negative pregnancy (5.9%), multiple-gestation (4.4%), oligohydramnios (4.4%), anomalies (4.4%), cardiac diseases (4.4%), preterm-premature rupture of membranes (2.9%), anemia (2.9%) , intra-uterine growth restriction (1.4%), cord around the neck (10%) and unknown cause (31.3%).

Table 2: Risk factors associated with still births.

Risk Factors	No of cases	Percentage%
Pregnancy induced hypertension	17	25.3
Thyroid disorders	9	13.3
Gestational Diabetes Mellitus	5	7.4
Abruptio placentae	5	7.4
Rh isoimmunisation	4	5.9
Multiple gestation	3	4.4
Oligohydramnios	3	4.4
Congenital anomalies	3	4.4
Cardiac diseases	3	4.4
Preterm premature rupture of membranes	2	2.9
Anemia	2	2.9
Intrauterine growth restriction	1	1.4
Cord around the neck	7	10
Unknown	14	21.3

Majorities are spontaneous or induced vaginal delivery (91.1%).
Majority belongs to ≤1kg birth weight. 56.7% are males.

Graph 3: Based Mode of Delivery

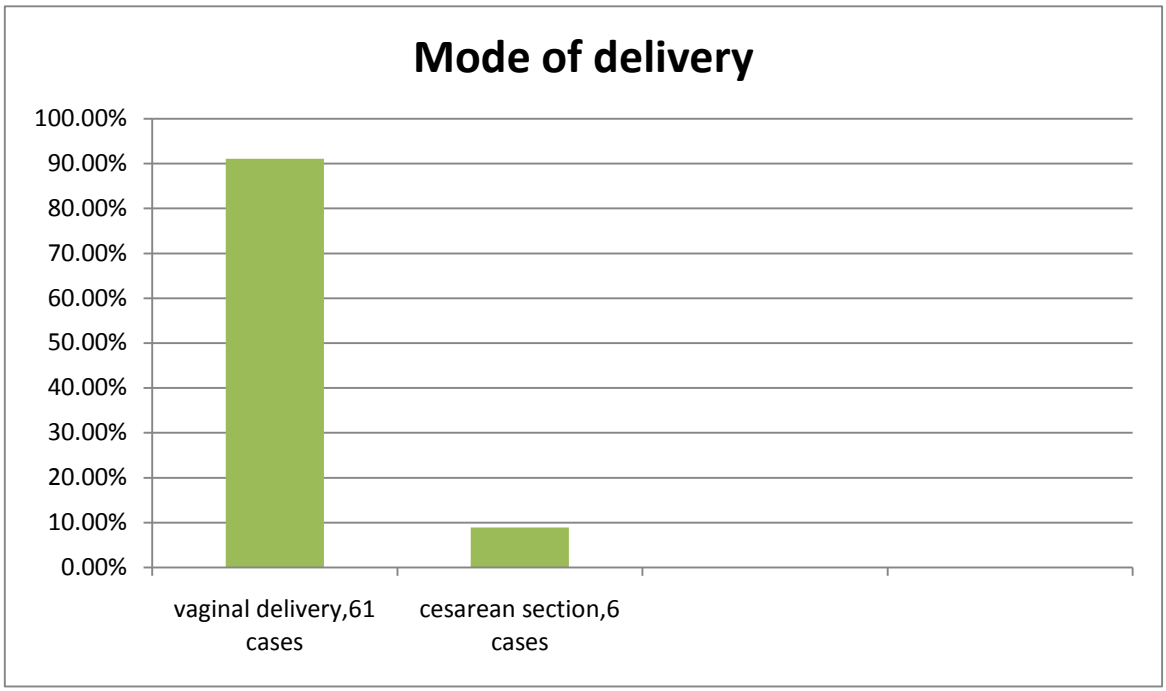


Table 3: Based on Sex of the Babies

Sex	No of cases	Percentage
Male	38	56.7%
Female	32	47.7%

Table 4: Based on Birth Weights

Birth weight	No of cases	Percentage%
≤1 kg	32	47.7
1- 2.5 kg	30	44.7
≥2.5kg	8	11.9

DISCUSSION

Still birth is an important indicator of maternal health and the socio economic condition. The incidence of still birth in present study is 7.23/1000 live births, similar incidence was reported by Altijani N *et al* was 10/1000 live births [8]. This is much lower than the study done by Gautam et al in which the incidence was found to be 55/1000 live birth. This could be because of better socio economic condition, better antenatal care and services and health education. Majority were between 21-30 years (73.1%) which correlates with study done by Gautam *et al* 61.2% [6]. The advanced maternal age associated with stillbirth is not observed in our study, as women conceiving at an advanced age are slightly uncommon in our society. Advance maternal age is usually associated with medical disorders. Majority of preterm still births belong to 28-34 weeks (58.2%) and term still birth between 37-40 weeks (13.4%). Study done by Shyam P showed that term still births were 41.11%. In both terms and preterms, still births caused by hypertension and abruption-placentae are the same.In our study, most of the patients are primigravida (55.22%) which indicates that they are ignorant about the danger sign of pregnancy and the same thing

correlates with the study done by Gautam *et al* (45.3%) [6] and Prassanna *et al* (49.73%) [7]. The most common risk factor for still birth is Pregnancy Induced Hypertension (25.3%) and it is observed in many studies Prasanna *et al* 34.6% [7] , B Sharma *et al* 27.6% [2], Gautam *et al* 21.4%[6]. Hypertensive disorders include chronic hypertension (pre existing hypertension), gestational hypertension, pre-eclampsia, eclampsia. The second most common cause is abruptio placentae (7.4%), studies carried out in India by Prasanna N *et al* and Gautam S *et al* showed 11.59% and 6.5% respectively. Causes may include vasculopathy, placental infarction.

In the present study the number of baby having congenital malformation is 4.4%, similar result was found in Prasanna *et al* (4.6%) whereas in other study the incidence is much higher (18.8%).[7]Congenital anomaly of fetus can be diagnosed by ultrasonography in early pregnancy. Medical termination of pregnancy is indicated so that still birth due to congenital anomaly can be reduced. Women with past history of abortion are 17 cases (25.37%) and past history of death is 6 cases (8.95%). In Shyam P study gives past history of abortion as 11.32% [5]. Gestational diabetes mellitus also one of the risk factor for still birth (7.4%) but this is slightly more compare to other studies like Prasanna *et al* 3.37%, Gautam *et al* 0.22%, Newtonraj A *et al* 1.7%. This may be due to vasculopathy, anomalies, decrease oxygen carrying capacity and polycythemia.

In our study Preterm premature rupture of membranes accounts to 2.9% of cases, which is the similar proportion, seen in Gautam *et al* 3.45%. Sudden rupture of memranes may leads to abruption and death of the fetus. In our study hypothyroidism is seen in 13.3% cases. This is due to maternal thyroid hormones have significant role in early placentation and trophoblastic invasion. Inadequate trophoblastic cell invasion cause abnormal placentation which is a risk factor for preterm delivery IUGR, placental abruption and fetal death. In 10% cases two or three loops of cord present which may result in stangulation and fetal death. In this present study 21.3% cases were due to unknown cause and they were unbooked cases and those who came at the last moment and delivered. In the present study 91.1% undergoes spontaneous or induced vaginal delivery which shows similar results in Gautam *et al* [6] and Shyam *et al* [5] 90.9% and 86.29% respectively.

Most of the babies were a male (56.7%) which correlates with the study of Prasanna *et al* (56.78%) [7] and Sharma *et al* (54.1%).[2]In the present study 47.7% are ≤1kg birth weight and 44.7% are1-2.5 kg birth weight.

CONCLUSION

1) Stillbirth is a devastating situation for a mother as well as for the family. It leads to psychological impact on the family specially the couple in terms of future pregnancy outcome and existing pregnancy treatment and management.
2) Maternal disorders and pregnancy complications were found to be the most commonly associated risk factors of stillbirth. Hence by proper screening during antenatal period and intrapartum supervision, majority of stillbirths can be prevented.
3) Also by empowering the peripheral health facilities with skills and resources and timely referral to tertiary care centre reduces significant rate of stillbirth.

REFERENCES

1) MacDorman MF, Kirmeyer SE, Wilson EC. Fetal and perinatal

mortality, United States, 2006. National vital statistics reports; vol 60 no 8. Hyattsville, MD: National center for health statistics. 2012.

2) B Sharma, GRV Prasad, N Aggarwal, S Siwatch, V Suri *et al*, Aetiology and trends of rates of stillbirth in a tertiary care hospital in the north of India over 10 years: a retrospective study. BJOG An international journal of obstetrics and gynecology, 2019.
3) Yakoob MY, Menezes EV, Soomro T, Haws RA, Darmstadt GL, Bhutta ZA. Reducing stillbirths: behavioural and nutritional interventions before and during pregnancy. BMC Pregnancy Childbirth 2009; 9(Suppl 1):S3.
4) Helgadottir LB, Turowski G, Skjeldestad FE, Jacobsen AF, Sandset PM, Roald B et al. Classification of stillbirths and risk factors by cause of death – a case-control study. Acta Obstet Gynecol Scand 2013; 92:325–333.
5) Shyam P, Analysis of risk factors of still birth: a hospital based study in a tertiary care centre. Int J Reprod Contracept Obstet Gynecol.2016 feb;5(2):525-29.
6) Gautam S, Rani V, Dalal M.Retrospective analysis of still birth at a tertiary care hospital. Int J Reprod Contracept Obstet Gynecol.2018 Oct;7(10):4012-15.
7) Prasanna N, Mahadevappa K, Antaratani RC, Lokare L. Cause of death and associated conditions of still births. Int J Reprod Contracept Obstet Gynecol.2015 dec;4(6):1970-74.
8) Altijani N, Carson C, Choudhury SS, Rani A *et al*. Stillbirth among women in nine states in India: rate and risk factors in study of 886,505 women from the Annual Health Survey. BMJ Open 2018; 8:e022583.
9) Newtonraj A, Kaur M, Gupta M, Kumar R. Level, causes, and risk factors of stillbirth: a Population-based case control study from Chandigarh, India. BMC Pregnancy and Childbirth 2017; 17:371.