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RESEARCH ARTICLE

STUDY ON STILL BIRTH: A CATASTROPH FOR PATIENT AND NIGHTMARE FOR THE OBSTETRICIAN

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Abstract

Introduction: Still Birth is a catastrophic event for both treating doctor and the patient. World wide in 2015, for every 1000 total births, 18.4 babies were stillborn, mostly in low and middle income countries. India has the highest number of stillbirths, with an estimated 592 100 deaths per year

Aim : To evaluate the still birth rate of our institution and to assess the sociodemographic factors contributing to it, and to predict the maximum risk period for still birth.

Material and Methods: All patients who gave consent and delivered a baby either vaginally or by caesarian section after 28 weeks of gestation during the study period (July 2019-June 2020) were included in the study. Still Birth was defined as a baby born after 28 completed weeks of gestation or weighing more than 1 kg, with no signs of life. Total no of patients during the study period were 2629, with 5 sets of twins. So total no of birth during the study period was 2634. Epidemiological data were compared between still birth and total births. Causes of still births were analysed and period of maximum risk for still birth was predicted.

Statistical Analysis : Descriptive analyses were expressed in proportion. Chi square test was used to assess the significance level and p value of <0.05 was taken as significant. Result: Total no. of births by either vaginal route or caesarean section during June 2019 to July 2020 were 2634 fetuses. among which, 137 fetus were still born. So still birth rate was 52/1000 live births. Maximum no of still births were in the age group of 20-25 years 69(50.3%), were primigravida 46(33.5%), belonged to low socioeconomic status 95(69.3%), came from rural areas 79(57.6%) and were unbooked 94(68.6%). There was statistically significant difference (p=0.0012) in unbooked cases when still births and total births were compared. No cause could be attributable to still birth in 15(10.9%) of cases, whereas 81(59.1%) had maternal causes, 17(12.4%) had fetal causes, 19(13.8%) had placental causes while 5(3.6%) had other reasons like acute infections or thermal burns. Major reason of Still Birth amongst the maternal causes, was labour complications 38(37.7%), whereas intra uterine growth restriction was the leading cause 8(5.8%) amongst the fetal factors. 36-40 week was the

gestational age during which maximum still births occurred.95(69.31%) of still birth cases were delivered by vaginal route

Conclusion:Majority of still births were in unbooked cases and labour complications were the leading cause of still births overall. Hence antenatal care and delivery by skilled attendant is of paramount importance. Routine antenatal care would also lead to early recognition of maternal and fetal high risk factors and their management.

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Introduction:-

Still birth is defined as birth of a fetus showing no signs of life after 28 completed weeks of gestation, or weighing more than 1 kg[1]. Global burden of still birth in 2015 was 2.6 million and stillbirth rate was 18.4 per 1000 births.[2]. India had highest number of stillbirth in 2015 accounting to a total of 5,92,000, which constituted 22.6% of world's still birth.[2].

According to Blencowe et al 2016, India has SBR of 23/1000 live births.Still birth rates varies within India amongst various states[3][4][5]. According to a study done on 9 states in India, Uttar Pradesh had highest still birth rate of 14.8[6]. Hence this study was conducted in Uttar Pradesh to asses the reason of such high still birth rate, to identify the causes leading to still births so that preventive strategies could be planned and to evaluate the epidemiological factors affecting still birth.

Indian newborn action plan was launched in India in 2014 with the goal of ending preventable stillbirths to achieve SBR of <10 by 2030.[7]A clear understanding of the risk factors that contribute to still birth is thus needed to prevent these preventable causes.With adequate provision of quality care, reduction in stillbirth rate is possible[8], A modest reduction in India's still birth rate would translate into thousands of life saved.

Methodology:-

A prospective observational study was done in the department of obstetrics and gynaecology,Swarooprani Nehru Hospital, Prayagraj, Uttar Pradesh, India, from July 2019 to June 2020 .All patients who gave consent and delivered a baby either vaginally or by caesarian section after 28 weeks during the study period were included in the study.Still Birth was defined as a baby born after 28 completed weeks of gestation or weighing more than 1 kg,with no signs of life .Total no of patients during the study period were 2629, with 5 set of twins. So total no of birth during the study period was 2634.Out of which 137 were still born.Detailed history and clinical examination were performed at the time of admission . History regarding ,age, parity, socioeconomic status(according to modified kuppusswamy scale), residence, and no of antenatal visits was taken. Patients having 3 antenatal visits were considered booked. Demographic profile in still birth cases were compared with total births . Primary cause of still birth was assessed using verbal autopsy tool, clinical examination,detailed review of the laboratory parameters and USG ,and were grouped into Maternal, fetal, Placental and others.Maternal causes included hypertensive disorders of pregnancy(Blood Pressure of more than 140/90mmHg on two occasions),Severe Anaemia(Hb<4 gm%),Icterus Gravidarum(S Bile acid>40micromol/Litre) Labour Complications (Obstructed Labour,Rupture Uterus,)Fetal causes included IUGR,Foetal congenital anomaly and prematurity(<37 completed week of gestation)and Gestational Diabetes Mellitus. Cases where no cause could be found, were labelled as unexplained. Mode of termination of pregnancy among these patients were also studied.. Gestational age at which patient delivered the still born baby was noted.

Statistical Analysis: SPSS version 11.5 was used for statistical analysis.Descriptive analytes were expressed in proportion. Chi square test was used to assess the significance level and p value of <.05 was taken as significant.

Observations:-

The total no. of births by either vaginal route or caesarean section during study period were 2634 fetuses. among which,137 fetus were still born. So still birth rate in our institution was 52/1000 live births.

Maximum no of patients having still birth were of age 20-25 years69(50.3%), were primi gravida46(33.5%),belonged to low socioeconomic status 95(69.3%), came from rural areas79(57.6%), and were

unbooked 94 (68.6%). When compared with the demographic profile of total births, no of unbooked cases were significantly more in still births ($p=0.012$) (table 1)

Maximum no of still births 81 (59.1%) had maternal risk factor, amongst which labour complications was the leading cause in 38 (37.7%) cases. IUGR was the leading cause of still birth 8 (5.8%) amongst the fetal factors. 15 (10.9%) of cases were attributable to antepartum haemorrhage, that compromised majority of placental causes. In 15 (10.9%) of cases cause of still birth was unexplained (table 2)

Majority of still births 71 (51.8%) occurred during 36-40 week of gestation. (Table 3). Out of 88 patients, maximum patient were delivered by vaginal route 61 patients (69.31%). caesarean section was done only in patients who had obstetric indication for caesarean sections like obstructed labour, previous caesarean sections, contracted pelvis etc. Caesarean hysterectomy was done in 3 patients (2.1%) who were admitted with ruptured uterus.

Discussion:-

Still birth rate in the present study was 52/1000 births, which is quite high when compared to SB rate of india which was 23/1000 live births in 2015 [2]. Reason for this is that ours is a tertiary care centre, and most of the complicated cases are referred to our institution. Also studies from various parts of India show considerable difference in stillbirth rates in their centres as shown below. This is due to difference in literacy, antenatal care, and demographic profile of the population studied.

Table showing comparison of still birth rate of studies in India:

	B Sharma et al [8] North India-2019	Dandona R et al [9] Bihar-2019	Newtonraj A et al [3] Chandigarh-2017	Kothiyal et al [10] UP-2018	Present study UP-2020
Stillbirth rate/1000 births.	67.9	15.4	16	78.3	52

Maximum no of patients were in the age group 20-25 years indicating period of maximum fertility in India. Unbooked cases have undetected high risk factors leading to Still Birth. Patients from low socioeconomic strata are mostly neglected, no intake of iron, folic acid during pregnancy, leading to higher fetal anomalies and maternal complications.

Table showing comparison of demographic profile of still birth cases. Parametres having maximum no of cases have been showing with percentage.

Max no of SB in	Anupama Dave et al (2016) [11]	S Sharma et al (2016) [12]	Anjali et al (2014) [13]	B Sharma et al (2019) [8]	Present study (2020)
Age group (yrs)	21-25 (51%)	-	21-25 (45.71%)	24-27 (37%)	20-25 (50.3%)
Parity	Primi (44.5%)	-	Primi (44.6%)	-	Primi (33.5%)
Low Socioeconomic status	45%	71.2%	-	-	69.3%
Unbooked cases	86.5%	-	-	83.9%	68.6%
Rural		58%	-	-	57.6%
Gestational Age (week)	32-36 (37.5%)		31-35 (33.3%)	-	36-40 (51.8%)

Labour complications, anaemia and IUGR ranked first three as risk factor to Still Birth overall. These are also the factors that account for 'preventable causes' of still birth to some extent. Institutional delivery, Delivery by skilled birth attendant, Iron and folic acid supplementation and routine antenatal visits are the means by which these risks could be reduced, and hence the Still Birth rate. Comparison of the causes of Still Birth in various other studies is shown.

Table showing comparison of major risk factors for StillBirth in our study with other indian studies.

Risk Factor	Newtonraj A et al[3]	Ami Yagnik 2016[14]	B Sharma et al[8]	Mitalimadhusmita et al[15]	Present study(2020)
Labour complications	5%	-	29%	14.8%	37.7%
Severe Anemia	-	-	-	12.34%	14.5%
Hypertensive disorders in pregnancy	18.2%	28%	-	16.22%	11.6%
APH	3.3%	21%	19.5%	14%	10.9%
IUGR	19.9%	22%		-	5.8%
Preterm	8.8%			-	4.3%
Congenital anomaly	18.8%	15%	9.2%	7.7%	2.1%
Maternal Diabetes	1.7%	2%	1.2%	2.08%	2.1%
Unexplained	44.7%	10%		20%	10.9%

69.3% of the stillborn babies were born vaginally, and 28.4% by LSCS. This is similar to the study done by Madhusmita et al where 81.8% of cases were delivered by vaginal route. This is because most of the still births were delivered vaginally even in cases of previous caesarian section.

Conclusion:-

We still have a very high still birth rate when compared to western countries. Present study showed maximum no of cases due to labour complications, severe anaemia, and IUGR. While most of the still births are preventable, Our aim should be providing skilled obstetric care to the patients and identifying high risk factors at the earliest so that expecting mothers could be saved from this traumatic experience. Active involvement of the frontline workers in identifying risk factors and providing iron and folic acid tablets in rural areas should also be promoted. Together, we should aim for the target of Newborn action plan of India for reducing preventable causes of SB to single digit by 2030.

Limitation of the study:

Small sample size was the limitation of the study.

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