Original Research Paper

Obstetrics & Gynaecology

EVALUATION OF VARIOUS RISK FACTORS OF PERINATAL MORTALITY IN A TERTIARY HOSPITAL, AP

Dr. Paidi. Durga Kumari	MD, DGO, Associate Professor OBGYN, Siddhartha Medical College, Vijayawada
Dr. R. Sowjanya	MD, DGO, Associate Professor OBGY, Siddhartha Medical College, Vijayawada
Dr. Gollapalli. Aruna	MD, Associate Professor OBGYN, Siddhartha Medical College, Vijayawada

ABSTRACT **Background-** It is important to know various maternal risk factors which lead to adverse perinatal outcome and enable us to form some strategies to reach our goals to reduce the perinatal deaths. **Aims and Objectives of the study**: is to evaluate the causes and risk factor for perinatal deaths in a tertiary institute and form strategies and protocols in our hospital to reduce perinatal deaths **Material and Methods- Study design:** Prospective study This study was conducted at OBGYN department, Siddhartha Medical College, Vijayawada done during the period of 1.01.2021 to 31.12.2021. All antenatal women admitted in labor room and antenatal wards were studied by means of a preformed proforma and viewed their outcome. In all cases of perinatal deaths risk factors were analysed in detail. **Results-** Total number of deliveries in the hospital were 9698. Out of which the perinatal deaths studied were 568 [5.85%]. Among these 252 [44%] were IUFD/ Still births and 316 [56%] were early neonatal deaths. In these cases of deaths 121 cases were Respiratory distress syndrome mostly due to prematurity, 82 birth asphyxia, 79 sepsis. The results were presented as percentages, rates and proportions. The results are compared with 5 studies and WHO standards. All studies had similar percentage except Philippine study 3 showed very low PNMR. [3][1,2,47] **Conclusion:** Analysis of perinatal deaths is important as it is an important index of antenatal care and quality of new born care in an institution

KEYWORDS : Perinatal, mortality, PNMR, risk factors, Stillbirth

INTRODUCTION:
The term 'perinatal mortality' was coined by Peller in 1940s.[8] Perinatal mortality is a sensitive indicator of reproductive health care[maternal health and nutrition]; which reflects the quality of obstetric and paediatric care available in a particular area at times adverse social factors may contribute to some extent.

Definitions -
Perinatal mortality denoted the number of stillborns and deaths occurring from the 28th completed week of pregnancy till the end of the first week of life. To maintain uniformity, the World Health Organization defines a stillbirth as death of a fetus of birth weight 1000 g, gestational age 28 completed weeks (if weight unknown) or crown-heel length 35 cm (if both criteria unknown)[5][6]

$$\text{perinatal mortality rate} = \frac{\text{perinatal deaths (stillbirths and early neonatal deaths)}}{\text{total no of births}} \times 1000^{[5]}$$

Still birth and deaths within first week of life are combined because factors responsible for these two types of deaths are often similar, being those operating before and around the time of birth, obstetrically related factors.

More than 3.3 million stillbirths and over 3 million early neonatal deaths are estimated to take place every year. In the year 2000, over 6.3 million perinatal deaths occurred worldwide: almost all of them (98%) occurred in developing countries and 27% in the least developed countries. In developing countries stillbirths represent more than half of perinatal deaths and especially during intrapartum period which are mostly preventable causes[2]. The perinatal mortality rate is five times higher in developing than in developed regions.

According to the 2014 report, the national PMR is 28/1000[5] [16 per 1000 births in urban areas to 28 per 1000 births in rural areas]. (still-births 5/1000, early neonatal 23/1000) with marked inter-state variability (e.g. Kerala 10/1000 and Odisha 37/1000[9]

The three major causes of neonatal deaths are complications from preterm birth (35%), infections (33%), and intra-partum related conditions or birth asphyxia (20%). Respiratory distress syndrome, in turn, is the leading cause of death in preterm infants, affecting about 1% of newborn infants. Birth defects cause about 21 percent of neonatal death.

The currently prevalent maternal factors resulting in increased perinatal loss include adolescent pregnancies, maternal undernutrition, poor socioeconomic status, iron-deficiency anemia and other micro-nutrient deficiencies, inter-pregnancy intervals <12 months or >60 months, lack of antenatal care, maternal infections, pre-eclampsia and type-2 diabetes.[2][9]

The World Health Organization has defined stillbirth as when a baby is born with no signs of life with a birth weight over 1000 g, gestational age is more than or equal to 28 weeks, and/or, body length more than 35 cm.[5] Perinatal mortality includes both StillBirths[SB] and Early Neonatal Deaths. The Every Newborn Action Plan from the WHO has a target of 12 or fewer SBs per 1000 deliveries by 2030. In 2014, as part of the India Newborn Action Plan, the Indian government adopted a target of <10 SBs per 1000 births by 2030, the first-ever national SB-prevention target. [5][6]

MATERIALS AND METHODS :
Study Design: Prospective Observational study.

Sample Size: The study population included all the cases of perinatal deaths at our department of Obstetrics and Gynaecology, Government General Hospital, Siddhartha Medical College, Vijayawada.

Study Period: From 1.01.2021 to 1.12.2021.

Inclusion Criteria:
All cases who delivered in our hospital and had perinatal death

Exclusion Criteria:
Women who delivered at home or other hospitals. All Covid affected pregnancies.

Study Method- Collection Of Data-
The purpose of the study was explained to the participants. Signed consent was taken. Face to face interviews were conducted using the structured questionnaires, including history taking and physical examination.

RESULTS:
Total number of deliveries - 9698
Total number of IUFD /stillbirths - 252
Total number of early neonatal deaths - 316
Total number of perinatal deaths - 252+316= 568
PNMR -   568/9698 x1000= 58.6%

{Among these 252 [44%] were IUFD/ Still births and 316 [56%] were early neonatal deaths}

Table 1: Booked and unbooked cases

Booked	Our hospital	182 [32%]
	Other hospitals	221 [39%]
Unbooked		165 [29%]

Table 2 : Age wise distribution

<20 years	96 [17%]
20 - 30 yrs	344 [60.5%]
>35 yrs	128 [22.5%]

Table 3: Parity

Primipara	316 [55.6%]
2 and 3 parity	203 [35.4%]
> 3	49 [9.0%]

Table 4: gestational age

28 - 34 weeks	166 [29%]
35 - 36 weeks	122 [21%]
37- 40weeks	178 [32%]
>40weeks	102 [18%]

Table 5 : Maternal causes

Anemia [moderate to severe]	256 [45%]
Preeclampsia	345 [61%]
Diabetes	212 [37%]
Chronic hypertension	41 [7%]
Obesity BMI >25kg/m2	245 [43%]
Rh negative	11 [1%]
Fever	162 [29%]
Labor abnormalities	152 [27%]
malpresentations	112 [20%]
PROM	145 [26%]
Multiple pregnancy	10 [2%]
Chronic diseases	32 [6%]
Jaundice	23 [4%]
HIV and HbsAg positive cases	45 [8%]
Idiopathic	176 [31%]

Table 6: Birth weight

< 1000gm	1000 - 1500g	1500-2000g	2000-2500g	2500-3000gm	3000-3500g	3500-4000	4000 gm
45 [8%]	58 [10%]	102 [18%]	141 [24.9%]	134 [24%]	42 [7%]	45 [8%]	1 [0.1 %]

Table 7: Provision of Antenatal care

Good care	Average care	No care
232 [41%]	256 [45%]	80 [14%]

Table 8 Mode Of Delivery:

Vaginal	Instrumental	Elective LSCS	Emrgency LSCS
256 [45%]	34 [6%]	56 [10%]	221 [39%]

Table 9 Causes Of Perinatal Deaths

Mortality profile	Early neonatal death	IUFD/ Stillbirth
Respiratory distress syndrome	121	-
Meconium aspiration syndrome	16	-
major Congenital anomalies	15	12
prematurity	2	8
IUFD	-	119
Still births	-	133
HIE/ asphyxia	82	-
Sepsis/ pneumonia/ meningitis	79	-
Metabolic causes	2	-

DISCUSSION :
Our study is compared with the findings of 4 studies.

Study1- A study of perinatal mortality and associated maternal profile in a medical college hospital.Calcutta[1]

Study 2 Perinatal Mortality: An Observ Perinatal Mortality: An Observational Study At Tertiary Centre GMC Akola, Maharashtra, India.[2]

Study3- Perinatal morbidity and mortality in the Philippines[3]

Study 4- Risk factors for perinatal mortality: a case control study from Thiruvananthapuram, Kerala, India[4]

The perinatal mortality in my study is 568 [58.6%] which is correlating with other studies done at tertiary centers. Still birth rate is 252 [44%] and early neonatal death rate 316 [56%] In our study the rate is more than national goal because most of the cases are late referrals and having medical causes where preterm induction of labor is done. Study1 showed 67%. Study 3 showed lower PMNR of 19% due to proper doctor patient ratio , good neonatal facilities in their hospital.Study 4 PNMR is 29 32 percent are booked in our hospital and 39 percent are booked outside the hospital.

Extremes of age group is found to be a risk factor and is similar to study 2 where teenage pregnancies are 17%. Study 4 has more of elderly aged study population Primi gravida are 55.6% in our study similar to study1 it is 53.6%. Most of the deaths are due to preeclampsia which is found common in primigravida[1] 29 percent are found at the gestational age of below 34 weeks and weight below 2000gm which may contribute to prematurity.

Most common maternal risk factor in our study is hypertension [67%], diabetes [37%], fever [29%], idiopathic prematurity [31%] . This is similar to Ngoc et al. who described preterm delivery and hypertensive disorders as the most common obstetric problems leading to PM. [1][8]

Anemia was the most common associated factor in most of our cases[2] and second associated factor is obesity.

Universal screening for diabetes should be mandatory so that 100 percent of diabetics cases has to be detected.

The main cause for SBs was antepartum hypoxia (34.4%) and fetal growth disorders (26.3%). Complications of intrapartum events contributed to 32.8% of the early neonatal deaths.[7][9] The global epidemics of obesity and noncommunicable

diseases, notably hypertension and diabetes, are effecting pregnancies in all regions, especially when combined with advanced maternal age. There are estimates that attribute about 10% of SBs to these three disorders. Primary prevention of these disorders along with improved detection and management of effected women where possible before pregnancy will help improve perinatal outcomes[7] The use of Doppler in low-risk women has also helped in identifying women at risk for unexplained SBs, similar reports were given by a study in South Africa. One Cochrane review concluded that introducing routine ultrasound even in resource-limited as reduced PNMR as at least 25% of the pregnancies had some risk factor.[7]

CONCLUSION:

Achieving the national goal of perinatal mortality in India is the need of the hour. Most of the causes of perinatal mortality were preventable, the national goals can be achieved by improving socio-economic conditions, providing adequate antenatal care, improving maternal nutrition, creating effective and early referral systems from the periphery to tertiary hospitals and improving early and intensive neonatal care. Health information has to reach all pregnant women in unreached areas.

This study information allows decision-makers to identify problems, track temporal and geographical trends and disparities and assess changes in public health policy and practice.

REFERENCES

1. https://pubmed.ncbi.nlm.nih.gov/9212575/A study of perinatal mortality and associated maternal profile in a medical college hospital.Dasgupta S, Saha I, Lahiri A, Mandal AK.J Indian Med Assoc. 1997 Mar;95(3):78-9.
2. IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 16, Issue 9 Ver. I (Sep. 2017), PP 35-38 www.iosrjournals.org DOI: 10.9790/0853-1609013538 www.iosrjournals.org 35|Page Perinatal Mortality: An Observ Perinatal Mortality: An Observational Study At Tertiary Centre Dharmendra Raut1 , Sujata Gujarkar2 Sion Hospital, Mumbai, Maharashtra, India. MBBS final year student5 , GMC Akola, Maharashtra, India.
3. Perinatal morbidity and mortality in the Philippines H Baja-Panlilio, J Cabigas-Resurreccion, A T Matanguihan, J B Cadorna, B Sarmiento, E Villamoran-Baviera
4. Risk factors for perinatal mortality: a case control study from Thiruvananthapuram, Kerala, India Mayadevi Brahmanandan, Lekshmi Murukesan, Bindu Nambisan, Shaila Salmabeevi
5. World Health Organization, author. Neonatal and perinatal mortality: country, regional and global estimates. Geneva, Switzerland; 2006.
6. National Family Health Survey-3: Summary of findings. Available from: http://www.nfhsindia.org. Perinatal mortality and its causes in a rural block in Tamil Nadu, Southern India: A community-based nonconcurrent cohort study
7. Anne George Cherian, Cherryl Tryphena, Kuryan George, Vinod Joseph Abraham, Venkata Raghava Mohan, Jasmine Helan Prasad Department of Community Health, Christian Medical College and Hospital, Vellore, Tamil Nadu, India
8. Perinatal Mortality What has Changed? *Sharmila B Mukherjee d #Tapas BandyopadhyayFrom the Departments of *Pediatrics and #Neonatology, Lady Hardinge Medical College, New Delhi, India
9. THE RISK FACTORS AND ADVERSE MATERNALAND PERINATAL OUTCOMES DUE TO ANEMIA IN PREGNANCY PERIOD IN TERTIARY CARE HOSPITAL, VISAKHAPATNAM. Dr Nirupama Palakodeti MS OBG , Assistant Professor ,1 Department Of Obstetrics And Gynaecology, Gitam Institute Of Medical Sciences And Research, Rushikonda , Visakhapatnam, AP. Original Research Paper Gynaecology