RECODE CLASSIFICATION OF STILLBIRTHS AT A TERTIARY CARE HOSPITAL

Medical Science

Nupur Hooja	Professor, SMS Medical College, Jaipur
Bhomraj Kumavat	ResidentSMS Medical College, Jaipur
Rajani Nawal*	Assistant Professor, SMS Medical College, Jaipur *Corresponding Author

ABSTRACT

Stillbirths are a major contributor to perinatal mortality. A universal classification system is required for evaluation of still births and achieve uniformity and comparability. The objective was to determine the etiology of stillbirths using the Recode classification system. It was a descriptive study conducted in a tertiary care hospital ,74 still births in a periods of 3 months were classified using Recode classification system. Results showed that the stillbirth rate was 40.77 per 1000 live births. The ReCoDe primary classification system enabled 90.55 % of the cases to be assigned a relevant condition, leaving only 9.45 % as unexplained. The largest condition associated was fetal growth restriction (16.2 %).So,to conclude,ReCoDe classification system is an easy and uniform system to classify almost all still birth for international comparisons,surveillance and to plan health care policies.

KEYWORDS

stillbirth, ReCoDe, growth restriction.

Introduction

Stillbirths are a major contributor to perinatal mortality. The stillbirth rate in the developing world is estimated to be from 20 to 32 per 1000 births.[1] In India,it is 4 per 1000 birth and 6 per 1000 birth in Rajasthan in 2015[2].

Due to the limitations of the ICD system [3], numerous classification systems have developed.Some include categories best suited for epidemiology and health care planning purposes, including risk factors such as small for gestational age or twin pregnancy.Others aspire to provide information on the cause of death, focusing on specific clinical groups relevant to biomedical research questions A universal classification system   is required for evaluation of still births and achieve uniformity in research,formulating health care policies and international comparisons.

Aims and objective

To classify the stillbirths using the ReCoDe classification system:Relevant Conditions And Causes Of Death (2005)[4] and   to determine the major etiologies of stillbirths in our setting.

Method

This was a hospital based descriptive study conducted in Department of Obstetrics and Gynaecology, S.M.S. Medical College,Jaipur from 1st January till 31st March 2017.

Women with documented singleton stillbirth more than 22 weeks or with a birth weight more than 500gm,with signs of maceration or absent fetal heart sound by Doppler ultrasound before the initiation of labour)[5] or an Apgar score 0 at 1 and 5 minutes were selected from women admitted in the labour room for delivery. A written informed consent was taken from all women,included in the study.

Complete history taken and physical examination was done. Foetus, liquor. Placenta and cord were examined in detail.Analysis was done and stillbirths classified using ReCoDe classification system.

Results The study was conducted on 74 still births included in the study,after applying the inclusion criteria to the total 1864 births in the study duration and excluding the   1788 live births and 2 multiple pregnancies . The stillbirth rate was 39.69 per 1000 live births.

The stillbirths were classified in our study to evaluate the etiology of the stillbirths using the ReCoDe classification system. The ReCoDe classification system was chosen over the other systems because in the ReCoDe system the proportion of unexplained stillbirths is lesser. Also, the ReCoDe classification performed well on the Infokeep score [6] ReCoDe is a simple classification based on clinical features of mother,fetus, placenta and liquor. It identifies the relevant condition at the time of death."What went wrong, not necessarily why". It has usefulness in counselling and making public health polices for prevention etc.

Using the the ReCoDe primary classification system, majority of the deaths in the study could be classified.It enabled 90.55 % of the cases to be assigned a relevant condition, leaving only 9.5 % as unclassified. The condition of the mother was responsible for maximum number of stillbirths (32.5%) and fetus for 17.5%.Placental causes were also observed in 17.5% stillbirth. Amniotic fluid and related factors were responsible for 12.5 % stillbirths.As high as 9.5% stillbirths remained unclassified. **Table 1.**

Table 1 : Classification of stillbirth according to ReCoDe classification system

Condition Related To	Number of fetus (N=74)	Percentage (%)
A. Fetus	15	20.3
B. Umbilical Cord	8	10.8
C. Placenta	12	16.2
D. Amniotic fluid	10	13.5
E. Mother	19	25.6
F. Intrapartum	3	4.1
G. Unclassified	7	9.5

Maternal causes included hypertensive diseases of pregnancy (12.5%) and diabetes (7.5%) as major contributing factors.Others were thyroid,anaemia and SLE..Intrauterine growth restriction was the biggest cause among foetal factors   of stillbirths (10%).Foetal congenital anomaly and hydrops due to Rh- isoimmunisation were also other causes of foetus causing stillbirth.**Table 2**

Table 2.Maternal and Foetal Causes of Stillbirth

Condition Related To	Number of fetus	%
Mother	19	
1. Diabetes	4	21
2. Thyroid diseases	2	10.5
3. Hypertensive diseases in pregnancy	10	52.7
4. Systemic Lupus Erythematosus	1	5.3
5. Anaemia	2	10.5
Foetus	**15**	
1. Lethal congenital anomaly	2	13.33
a. Neural tube defect	1	6.66
b.. Cardio vascular & Gastro-Intestinal defect	1	6.66
2. Hydrops due to Iso-immunization	**1**	6.66
3. Fetal growth restriction	**12**	80

Placental cause found in 17.5% stillbirth, were abruption was responsible for 15 % of them.Autopsy of the stillborn was advised but refused by all women. Genetic analysis was also advised for stillbirth where considered needful but only three parents agreed. The karyotyping of these fetus was reported as normal.If autopsy and karyotyping are done of all stillbirth fetuses, the category of unclassified may be minimized.**Table 3.**

Table 3.Other Etiologies of Stillbirth

Condition Related To	Number of fetus	Percentage (%)
Umbilical Cord	**8**	
1.Prolapse	2	25
2.Constricting loop	4	50
3.Knot	2	25
Placenta	**12**	
1.Abruptio	8	66.66
2.Previa	4	33.33
Amniotic fluid	**10**	
1.Polydramnios	1	10
2. Oligohydramnios	8	80
3.Chorioamnionitis	1	10
Intrapartum	**3**	
1. Obstructed Labour	1	33.33
2.Meconium stained liquor	1	33.33
3.Eclampsia	1	33.33
Unclassified	**7**	

Our observations were in contrast to Sonal et al 7 and Ego et al 8 in which fetus related conditions was responsible for maximum number of stillbirth (28.39% and 58.7% respectively). The single largest condition associated with stillbirth was fetal growth restriction (25.9%) in their studies. 25.9% stillbirth remain unclassified in their study also.The study done by Rayamajhi RT et al 9 also showed that gestational diabetes and hypertension contributed to fetal loss in 5.5%. Gardosi et al 10. observed in their study that of the 66.2 % stillbirths labeled unclassified in Wigglesworth system of classification, 47% were growth restricted. Only 15.2 % cases remained unclassified after applying ReCoDe system .

Conclusion:Complete work up regarding the cause of death is crucial for counseling the parents for their future pregnancies. ReCoDe classification system is an easy and uniform system to classify almost all still birth for international comparisons,surveillance and to plan health care policies.

References
1.   Smith G.C.S., Fretts R.C. Stillbirth Lancet 2007;370: 1715-25.
2.   http://www.censusindia.gov.in/vital_statistics/SRS_Report_2015/8.Chap%204-Mortality%20 Indicators- 2015.
3.   WHO. ICD-10: International statistical classification of diseases and related health problems: Tenth revision (2nd revision):Geneva, World Health Organisation, 2004.
4.   Gardosi J, Kady SM, McGeown P, et al. Classification of stillbirth by relevant condition at death (ReCoDe): population based cohort study. Br Med J. 2005;331:1113–7.
5.   Making every baby count audit and review of stillbirths and neonatal deaths WHO 2016
6.   Flenady V, Froen JF, Pinar H, et al. An evaluation of classification systems for stillbirth. BMC Pregnancy Childbirth. 2009;9:24.
7.   Sonal A. Kumbhare , K. Maitra N .Aetiological Classification of Stillbirths: A Case Control StudyThe Journal of Obstetrics and Gynecology of India (November–December 2016) 66(6):420–425
8.   Ego A., Zeitlin J., Batailler P., Cornec S., Fondeur A., Baran-Marszak M., Jouk P., Debillon T. and Cans C. Stillbirth classification in population-based data and role of fetal growth restriction: the example of RECODE, BMC Pregnancy and Childbirth 2013, 13:182.
9.   Rayamajhi RT, Shreshtha N, Karki C, Padhye SM Evaluation of Clinicosocial Factors Associated with Antepartum and Intrapartum Stillbirth at Kathmandu Medical College Teaching Hospital,SAFOG,2009;1(1):14- 18.
10. Gardosi J, Kady SM, McGeown P, et al. Classification of stillbirth by relevant condition at death (ReCoDe): population based cohort study. Br Med J. 2005;331:1113–7.