THE JOURNAL OF OBSTETRICS AND GYNECOLOGY OF INDIA

The Journal of Obstetrics and Gynecology of India (November–December 2011) 61(6):656–658
DOI 10.1007/s13224-011-0115-7

ORIGINAL ARTICLE

Re. Co. De.: A Better Classification for Determination of Still Births

Singh Abha · Toppo Alpana

Received: 21 January 2009 / Accepted: 25 October 2011 / Published online: 9 February 2012

Abstract
Objective To test the classification system Re. Co. De. to improve our understanding of the main causes associated with fetal deaths.
Method The study included 348 women who were admitted with intrauterine deaths. After the stillborn babies were examined along with the placenta. The causes were classified according to Re. Co. De. system.
Results The analysis of the new classification (Re. Co. De.) allowed attributable causes to about 90% of cases of stillbirth explained while 10% where unexplained. The commonest cause was found to be toxaemia of pregnancy, followed by IUGR, rupture uterus, obstructed labour, abruptio placentae etc.
Conclusion The Re. Co. De. system gives us a better understanding of antecedents of stillbirth and the clinical practices, which need to be addressed to reduce perinatal mortality and have a better obstetric result in the next pregnancy.

Keywords Relevant condition of death · Stillbirth · Perinatal mortality · Eclampsia · IUGR

Singh A. (✉), Professor and Head · Toppo A., Senior Resident
Department of Obstetrics and Gynaecology, Dr. B.R.A.M. Hospital, Raipur, India
e-mail: ajab_2k@yahoo.com

Introduction

Stillbirths (SB) are the largest contributor to perinatal mortality. Most of the studies on pregnancy outcomes, maternal mortality rates and SB in India are hospital based and do not reflect the true picture of the situations in the community. A SB is emotionally upsetting to the parents who are now anxious about the chances of having a pregnancy carry through successfully the next confinement.

"The birth of a newborn after twenty-eight completed weeks of gestation weighing 1,000 gm or more, with baby showing no signs of life after delivery is a still born" [1]. Such death includes both antepartum and intrapartum death.

A new classification system, Re. Co. De. classification (relevant condition at death) helps us in understanding better the various causes of SBs. This new classification system identifies 85% conditions. This is unlike other classification systems like Aberdeen or Wigglesworths classification which could identify only one-third causes of SB leaving most of them unexplained.

Material and Methods

This is a retrospective study done in the Department of Obstetrics and Gynecology, Medical College, Raipur from September 2007 to September 2008.

The study included 348 women who were admitted with intrauterine deaths. A detailed history was taken including

the age, parity, body mass index, booking status and socioeconomic status, obstetrics history, history of present illness and personal history regarding any drug intake or any medical and surgical illness. Following a general, systemic and obstetric examination, the women were subject to the following investigations; hemoglobin, blood grouping and cross matching, blood urea and sugar, sickling, urine-Routine/microscopic, coagulation profile. After delivery, the "still born" baby, the placenta and the cord were examined for the following abnormalities:

Baby	Cord	Placenta with membranes	Amniotic fluid
Congenital malformation	Prolapse	Weight	Meconium
Maceration	Entanglement	Meconium	Blood
Anemia	Hematomas	Oedema	Volume
Plethoric or not	Number of vessels	Infarcts	

Lastly the cause found for each still birth was classified according to the Re. Co. De. classification given by Gardosi et al. [2]. Women were then counseled accordingly for their future pregnancy.

Results and Discussion

The still birth rate in our hospital was found to be 6.58% and was associated with certain factors (Table 1).

In our study the maximum number of SBs was in maternal age group >35 years. In the study by Reddy [3], the relationship of maternal age with still birth risk was calculated in approximately 5,000 gestations. The risk in women >35 years was found to be 1.32 fold greater than in the younger women. Another study done by Saha et al. [4], also concluded that advance maternal age is considered to have more adverse pregnancy outcomes as compared to the younger age groups.

On analysis, our results found a connection between high BMI and still birth. In a study done by Stephansson et al. [5], this association was investigated. They found that maternal overweight and raised BMI, increased the risk of antepartum SB.

Table 1 Demographic profile

Rural population	79.31%
Unbooked status	89.08%
Low socioeconomic status	82.47%
High BMI	OR (1.58)
Age of the mother > 35 years	38.54%
Low birth weight	26.72%
Gestational age < 36 wks	24.72%

Birth weight is also one of the influential factors for unfavorable outcome. For birth weight 1–1.5 kg, our SB rate was 26.72%, whereas for birth weight 2.6–2.9 kg, it was reduced to 9.48%.

Savvas et al. also found a strong relationship between still birth and small for gestational age. They found half the still born were <10 percentile for weight [6].

Table 2 shows various etiologic factors for SB, commonest being hypertensive disorders of pregnancy. In our study the overall incidence of SB in this category

Table 2 The etiologic factors were classified according to Re. Co. De. classification

		Cases	%
Group A	Fetus	66	
	Congenital anomaly	15	4.31
	Infection	5	1.43
	Non immune hydrops fetalis	3	0.86
	Isoimmunization	1	0.28
	Twin twin transfusion	2	0.57
	IUGR	40	11.49
Group B	Umbilical cord	14	
	Prolapse	8	2.29
	True knot	1	0.28
	Cord around neck	5	1.43
Group C	Placental causes	44	
	Abruptio placentae	31	8.90
	Placenta previa	13	3.73
Group D	Amniotic fluid	16	
	Chorioamnionitis	2	0.57
	Oligohydramnios	8	2.29
	Polyhydramnios	6	1.72
Group E	Uterus	58	
	Rupture	30	8.62
	Obstructed	28	8.04
Group F	Mother	113	
	Severe anemia	24	6.89
	DM	4	1.14
	Hypertensive disorder (GHTN + APE + preeclampsia)	70	20.11
	Thyroid	2	0.57
	Essential hypertensive	2	0.57
	Heart disease	1	0.28
	Jaundice	10	2.87
Group G	Intrapartum		
	Asphyxia	2	0.57
Group H	Trauma		
	External	1	0.28
Group I	Unclassified		
	No relevant condition identified	34	9.77

was approximately 20% (preeclampsia 6.32%, gestational hypertension 4.02% eclampsia 9.77%).

In a study, by Villar et al. in a WHO antenatal care trial, analysis of 39,615 pregnancies, they found that fetal death was slightly higher in preeclampsia i.e., 2.2%, in comparison to gestational hypertension i.e., 1.4% [7].

Severe anemia as a cause of SB was present in 6.89% of our women. This figure is quite low in comparison, to a study done in sub-saharan Africa, where 63% SBs were attributable to anemia in mothers [8].

Congenital malformations were present in 4.31% of our women. Most of these were open neural tube defects. Wapner [9] found a very high percentage i.e., 25% of SBs caused by congenital malformations.

In our study, in group E we found that women with rupture uterus and obstructed labour were responsible for 8% of SBs in each condition.

Conclusions

Still births contribute significantly to perinatal loss. It is important to evaluate SBs and identify the preventable causes for future pregnancy.

The available classification systems either depend on extensive investigations or leave two-thirds of SBs unexplained.

Re. Co. De. is a clinically based classification system appropriate for a developing country like India, where minimal investigations are done. We found unexplained SBs in 9.77% women only.

Every hospital should audit their SBs and identify the preventable causes. Classification of SBs will give them a chance for recognizing the need for a close surveillance of women in future.

References

1. International statistical classification of disease and related health problems, 10th revision, vol. 2, Instruction manual. Geneva: World Health Organization; 1993.
2. Gardosi J, Kady S, McGeown, et al. Classification of stillbirth by relevant conditions at death (Re Co De): population based cohort study. BMJ. 2005;331:1113–7.
3. Reddy U, Ko C-W, Willinger M. Maternal age and the risk of stillbirth throughout pregnancy in the United States. AJOG. 2006; 195:764–70.
4. Sahu M, Agarwal A, Das V, et al. Advanced maternal age and obstetric outcome. J Obstet Gynecol India. 2007;57:320–3.
5. Stephansson O, Dickman P, Johansson A, et al. Maternal weight, pregnancy weight gain, and the risk of antepartum stillbirth. Am J Obstet Gynaecol. 2001;184:463–9.
6. Savvas E, Evangelos A. Case control study of factors associated with intrauterine fetal deaths. Med Gen Med. 2004;6:53.
7. Villar J, Carroli G, Wojdyla D, et al. Preeclampsia, gestational hypertension and intrauterine growth restriction related for independent conditions. AJOG. 2006;194:921–31.
8. Jones DW, Weiss HA, Changalucha J, et al. Adverse birth outcomes in United Republic of Tanzania impact and prevention of maternal risk factors. Bull World Health Organ. 2007;85:9–18.
9. Wapner RJ, Lewis D. Genetics and metabolic causes of stillbirths. Semin Perinatol. 2002;26:70–4.