



ORIGINAL RESEARCH PAPER

Gynecology

STUDY OF MATERNAL MORBIDITY AND MORTALITY DURING LABOUR AND PUERPERIUM IN A TERTIARY CARE HOSPITAL

KEY WORDS: Maternal Morbidity and Maternal Mortality

VERMA KUSUM	Assistant Professor, Department of OBG, Zenana Hospital, SMS medical college , Jaipur
SHARMA ASHA*	Senior Specialist (Obstetrics and Gynecology) Zenana Hospital attached to SMS Medical College *Corresponding Author
MENGHANI REKHA	Junior Specialist (Obstetrics and Gynecology) Zenana Hospital attached to SMS Medical College
VERMA ASHA	Sr. Professor, Obstetrics and Gynecology, Zenana Hospital, SMS medical college , Jaipur

ABSTRACT

Background: All pregnant women are at risk of obstetrical complications and most of these occur during Labour and Delivery leading to maternal morbidity and mortality.

Objective: To estimate the incidence & causes of maternal morbidity and mortality during Labour and Puerperium in a tertiary care hospital.

Material & Methods: It was a prospective Study conducted on all subjects, who were delivered in Zenana Hospital after 28 weeks of gestation and also included women who were admitted in postpartum period with maternal complications.

Results: Maternal morbidity was 64.2% and most common. Intrapartum morbidities were C.S. section (46.5%), Preterm Labour(8.4%), while Postpartum morbidities included PPH 3.17%, P.Sepsis (0.49%). Maternal Mortality was (0.20%) and 80% deaths were due to direct causes.

INTRODUCTION

Maternal morbidity/obstetric morbidity which is a part of major reproductive morbidity, has been defined by FIGO 1996 & WHO as "Morbidity in a woman who has been pregnant (regardless of site and duration of pregnancy) from any cause related to or aggravated by pregnancy, or its management but not from accidental/incidental causes. Maternal morbidity is difficult to measure as morbidity has several dimensions and also very little information is available on maternal morbidity specially in developing world. Maternal morbidity is thought to occur in similar cases due to similar causative factors as that which contribute to maternal mortality and hence similar preventive measures and action based interventions studies seem to be applicable to maternal morbidity.

MATERIAL & METHODS

This Hospital based prospective study was conducted in Department of Obstetrics and Gynecology, Zenana Hospital, SMS Medical College, Jaipur from Jan 2014 – Dec 2014. The patients were studied in details regarding complications/morbidity in antepartum, intrapartum & postpartum period. Complete history from day and time of admission, their mode and place of delivery and complications were considered. All maternal deaths that occurred in the period under study were also analyzed in detail.

DISCUSSIONS

Incidence of maternal morbidity was observed 64.02%, the high incidence was due to the fact that Zenana Hospital is a tertiary care institute and majority of the patients with complications find their way into the hospital which caters patients referred from city, rural and nearby districts to Jaipur(Table-1). Incidence of APH in our study was 2.5% (Table 2A) which seems in consonance with Ratnam et al 1992⁽¹⁾ 1.3% of all deliveries and chakraborty et al 2002⁽²⁾ who reported 1.13%.

In the present study, the incidence of eclampsia was found to 1.17% (Table 2A) of all hospital deliveries and responsible for 30% of all maternal deaths. Incidence of PROM in our study was 15.08% (Table 2B). V. Kamala Jayaram 2001⁽³⁾ reported incidence of PROM 11.5% which is almost similar to our study. Incidence of obstructed Labour was 0.53% (Table 2B) and 77% came for rural areas. Gupta N. et al 1991⁽⁴⁾ reported that nearly all complications were preventable with proper antenatal care and early detection of abnormalities during Labour. Incidence of rupture uterus was 1

in 500 deliveries (0.21%) Table 2B.

V. Kamala Jayaram⁽⁴⁾ reported that in 3rd world countries the hospital incidence of rupture uterus varied from 1 in 100 to 1 in 500 deliveries. PPH was the most common maternal morbidity viz. 2.03%. Shulman A et al 1956(5) reported 2.8% & Hayashi RH et al 1981⁽⁶⁾ reported incidence to be 4% (Table-2C). Incidence of hematoma was 1 in 693(0.16%) which is similar to the study of Mc Elen 1954⁽⁷⁾ showing 1 in 561. There were 4 cases reported with gapped episiotomy. This in itself is a morbidity.

For the prevention of these complaints WHO recommends use of episiotomies to be restricted (WHO 1996a). There were 2 cases of puerperal psychosis (0.04%). WHO in 1998 reported incidence of puerperal psychosis (0.1%-0.2%) in developing world (Table 2C)

Anemia was present in 88% (Hb <10gm %), it highlighted the significance of National Anemia Prophylaxis Programme as a part ANC (Ratnam 1992⁽¹⁾). Jaundice in pregnancy was present in 11 cases leading to higher maternal case fertility rate and similar high maternal and fetal loss from jaundice in pregnancy was reported by Lahiri et al 1974⁽⁸⁾, Mohammed Sultan Etal 1981⁽⁹⁾. Rheumatic heart disease was present in 12 cases (0.25%) Table-2D.

There were 10 maternal deaths (0.2%) in our study (Table 3) out of which 80% deaths were attributable to direct causes and 20% death occurred due to indirect causes. V Kamala Jayaram 2001⁽¹⁴⁾ quoted 66% & Nirmala Sharma 2001⁽¹⁰⁾ quoted 59.5% & Nomita Bedi 2001⁽¹¹⁾ quoted 90.1 of all maternal deaths were due to direct causes. Out of total 10 deaths 3 deaths were antepartum while 7 were in postpartum period (Table 3). Among these 5 deaths were due to Haemorrhagic Shock, 3 due to toxemia as the antecedent cause, 1 due to CHF and 1 due to hepatic-coma (Table 4).

Among these cases of maternal deaths 70% reached the hospital through a chain of referrals more than 12 Hours after the occurrence of complications. The arrival death interval in most cases in our study was less than 12 Hours. Pandit et al 1975⁽¹²⁾ & Bhatia et al 1993⁽¹³⁾ emphasized that maternal mortality rate in India is high not only because of poor antenatal, intranatal and postnatal care but also because of poor system of transportation and communication in rural areas.

CONCLUSION

Obstetrical Haemorrhage and Hypertensive Disorders are still the major causes of maternal deaths, most maternal deaths are preventable. Provision of skilled care and timely management of complication can lower the maternal morbidity and mortality. We also emphasize the need for antenatal registrations, early referral and utilization of available services.

**TABLE 1
DISTRIBUTION OF THE COMPLICATED OBSTETRIC CASES**

Complication	No. of cases	%
Caesarean selection	1445	46.3
Preterm vaginal deliveries	249	8.0
Stillbirth vaginal deliveries	176	5.6
Breech vaginal deliveries	84	2.6
Vaginal deliveries in other abnormal presentation and position	15	0.5
Rupture uterus	10	0.3
Peripartum hysterectomies	17	0.54
Postpartum hemorrhage	99	3.17
Puerperal Sepsis	14	0.49
Eclampsia	79	2.5
Pregnancy with Anemia per se	237	7.6
Antepartum hemorrhage	122	3.9
Pregnancy induced hypertension	301	9.6
Obstructed Labour	26	0.8
Pregnancy with previous caesarean section	218	6.9
Medical disorder	29	0.9
Total	3121	100

*Total number of cases. 4875 *Total no. of complicated cases 3121.

*Total no. of caesarean section 1406. *Maternal morbidity 64.02%

TABLE 2 Groupwise distribution of complications of deliver ed cases

A.	Antepartum Complications	No.	%
1.	Antepartum Hemorrhage	122	2.50
a)	Placenta Haemorrhage	52	1.07
b)	Accidental Haemorrhage	70	1.44
2.	Hypertensive Disorder	301	6.17
a)	Pregnancy including Hypertension	244	5.01
b)	Eclampsia	57	1.17
3.	Pregnancy with previous Caesarean Section	218	4.47
4.	Bad Obstetric History	156	3.20
5.	Multifetal Gestation	63	1.29
a)	Twin Pregnancy	61	1.25
b)	Triplet Pregnancy	2	0.04
6.	Post-dated Pregnancy	354	7.26
B.	Intrapartum Complications		
1.	Prelabour Rupture of Membranes	735	15.08
2.	Obstructed Labour	26	0.53
3.	Rupture Uterus	10	0.21
4.	Foetal Distress	515	10.56
5.	Malpresentations	327	6.71
6.	Malposition	6	0.12
C.	Postpartum Complications		
1.	Postpartum Hemorrhage	99	2.03
2.	Postpartum Eclampsia	22	0.45
3.	Puerperal Sepsis	14	0.29
4.	Hematoma	8	0.16
5.	Postpartum Shock	6	0.12

6.	Postpartum acute abdomen	5	0.10
7.	Postpartum respiratory distress	3	0.06
8.	Gapped Episiotomy	4	0.08
9.	Inversion of Uterus	2	0.04
10.	Puerperium Psychosis	2	0.04
11.	Urinary Retention	2	0.04

*Total number of cases. 4875 *Total no. of complicated cases 3121.

*Total no. of caesarean section 1406. *Maternal morbidity 64.02%

TABLE 3 DISTRIBUTION OF MATERNAL DEATHS IN RELATION TO LABOUR

	No. of cases	Percent
Antepartum deaths	3	30%
Intrapartum deaths	-	-
Postpartum deaths	7	70%
Total	10	100%
Total No. of cases	No. of Maternal Mortality	Percent
4875	10	0.20%

Out of 4875 cases the maternal mortality was observed in 10 (0.20%) cases.

(Total no. of deaths due to complications of pregnancy, childbirth or within 42 days of delivery MMR)

$$MMR = \frac{\text{(Total no. of deaths due to complications of pregnancy, childbirth or within 42 days of delivery from puerperal causes in an area during a given period)}}{\text{Total no. of live births}} \times 1,00,000$$

$$10 \div 4662 \times 1,00,000 = 214.50 \div 1,00,000 \text{ live births}$$

TABLE 4 DETAILS OF MATERNAL MORTALITY IN STUDY PERIOD

S.No	Complications / Antecedent factors	Cause of Death	Period of death
1.	PIH	Postpartum collapse Cardiopulmonary arrest	Postpartum
2.	APH	Pulmonary embolism Hemorrhagic shock	Antepartum
3.	Pregnancy with hepatic coma & S.Anemia	Postpartum hemorrhagic shock	Postpartum
4.	APH	Hemorrhagic shock S. Anemia	Postpartum
5.	Atonic PPH, shock	Hemorrhagic shock	Postpartum
6.	Severe Anaemia, B/L plural effusion CHF heart disease	Cardiopulmonary arrest CHF	Postpartum
7.	Respiratory distress S. anemia	Pulmonary edema S. aspiration pneumonitis	Antepartum
8.	APE, PIH	Cardiopulmonary arrest LVF Pulmonary edema Respiratory Distress	Postpartum
9.	APE, S.anaemia status eclampticus	Cardiopulmonary arrest pulmonary odema	Antepartum
10.	APE, PIH	Hyperpyrexia septicemia pneumonitis anuria	Postpartum

REFERENCES

- 1) Ratnam SS & Singh K: Towards Safe Motherhood, Future of Gynecology and Obstetrics, 1991.
- 2) Chakravarty A. Reduction in occurrence of uterine rupture in the central India, J. Obst Gynae, 2002 Jan, 22(1): 39-42.
- 3) V Kamala Jayaram: A Study of premature rupture of membranes- Management and Outcome & J. of Obst & Gynae of India Vol. 51, No 2 March/April 2001 page 58-60.
- 4) Gupta P, Mishra S, "Manual removal of placenta. J. of Obst. & Gyn. Of India Vol. 27, 1997, p-607-609.

- 5) Shulman A, Ratzan WJ Postpartum Hemorrhage: Etiology and Management. Mc ElinAm. J. of Obst. & Gyn. Vol71, No 1, Jan 1956, p-37-44.
- 6) Hayashi R.H: Management Of Severe Postpartum Hemorrhage due to Uterine Atony Using analogue of Prostaglandin F2; Obst. & Gyn. Vol.58, No, 4: Oct. 1981, P-427-429.
- 7) Mc Elin T.W: Puerperal Hematomas, Report of 73 cases and Review of the Literature Am. J. of Obst. & Gyn. Vol. 67, No 2: Feb 1954, p-356-365.
- 8) Lahiri BC, Jaundice in Pregnancy with Special Reference to Recurrent Jaundice. Journal of Obstetrics and Gynecology of India, Sept 1974.
- 9) Mohammad Sultan Khuroo, Mohammad Ramzani, Susan Skidmore, Mohammad Amin Sofi and Mohammad Ismail Khuroo. Incidence and severity of Viral Hepatitis in Pregnancy. The American Journal of Medicine 1981 Feb. Vol. 70.
- 10) Nirmala Sharma Maternal Mortality- A Retrospective study of ten years. J. of Obst i Gynae. Of India Vol. 51, no.1 Jan/Feb 2001 page 60-62.
- 11) Nomita Bedi, Inder Kambo, Maternal deaths in India- Preventable tragedies (An ICMR Task Force Study) J of Obst & Gynae of India Vol. 51, No. 2 March/April 2001 page 86-92.
- 12) Pandit RD, Daftary SN, Kulkarni SP. Changing trends in Maternal Mortality from 1929 to 1974 at Nowrosjee wadia Maternity Hospital, Bombay, India. Proceedings of 2nd International Seminar on Maternal and Perinatal Mortality. FOGSI, Bombay, India 1975.
- 13) Bhatia JC. Levels and Causes of Maternal Mortality in Southern India. Stud Fam Plann, 1993 Sept-Oct, 24 (5): 310-8
- 14) V Kamala Jayaram: Review of maternal morbidity. J of Obst. & Gynae of India Vol. 51, No 2 March/April 2001 Page 80-82.