



MATERNAL AND FETAL OUTCOME IN OBSTETRIC REFERRED CASES

Dr. Poornima M*

Assistant Professor, Department Of Obstetrics And Gynecology Grant Government Medical College And Sir J.J. Group Of Hospitals, Mumbai-8.*Corresponding Author

Dr. Rekha G Daver

Professor And Head, Department Of Obstetrics And Gynecology Grant Government Medical College And Sir J.J. Group Of Hospitals, Mumbai-8.

ABSTRACT**Background:**

Pregnancy and childbirth though physiological processes are not free from risks. Despite considerable advances in obstetric care maternal morbidity and mortality remains a major challenge faced by an obstetrician. As protocol based obstetric practice is becoming more common there are many patients who are referred from periphery to a tertiary care hospital for deliveries. Identification and referral of high risk pregnancies is one of the crucial steps in preventing maternal as well as neonatal morbidity and mortality since any undue delay a patient may affect maternal as well as neonatal outcome most severe of which is maternal or neonatal mortality. The aim of this study was to study the pattern of obstetric cases referred to tertiary care centre and to study the maternal and fetal outcome in these cases.

Aims and Objectives:

To study the maternal and fetal outcome in the referred obstetrics cases.

Materials and Methods:

After obtaining approval from institutional ethical committee we conducted a prospective study of 332 who were referred from other government, private or peripheral hospitals to our centre. Patients were enrolled in the study on the basis of a predefined inclusion criteria. Those patients who had any exclusion criteria were excluded from the study. A detailed clinical history, place from which patients were referred, type of transport used, causes of referral were studied. Physical and obstetric examination was done and relevant investigations were done. Management of the patient, course in ward, mode of delivery (i.e. whether vaginal or LSCS), maternal and neonatal outcome was documented. Causes of maternal mortality and morbidity were analysed. Neonatal outcome was assessed by incidence of low birth weight, premature delivery, stillbirths, NICU admissions and mortality during neonatal period. The data was tabulated and analysed using SPSS 16.0 version software.

Results:

Total 332 obstetrics patients referred to our hospital were included in this study. Out of 265 patients who were delivered at our institute 149 (56%) patients underwent normal vaginal delivery while LSCS was done in 116 (44%) patients. The common indications for LSCS included previous LSCS (37/116), Fetal Distress (19/116) and pregnancy induced hypertension and its complications (18%). 98 (27 %) patients were at risk of maternal mortality. Blood transfusions and CCU admissions were required in 20 % and 10% patients respectively. Maternal mortality was seen in 26 (7%) patients. The common causes of maternal mortality included medical disorders complicating pregnancy (31%) followed by Pregnancy induced hypertension (19%) and post party haemorrhage (16 %). There were 27 (9.71%) stillbirths while NICU admissions and neonatal deaths in NICU admitted neonates were seen in 68 and 22 patients respectively. Out of the studied cases 265 (80%) patients were delivered in our institute and out of remaining 67 patients 38 (11%) were discharged before delivery and 29 (9%) patients either aborted or were having ectopic pregnancy.

Conclusion:

Referral to a higher centre is a critical step in management of obstetrics cases. Proper referral at an appropriate time may be associated with decreased maternal and neonatal morbidity and mortality.

KEYWORDS : Referral in obstetrics care, maternal and neonatal morbidity, Maternal mortality, Outcome, Near miss cases.

Introduction:

Pregnancy and childbirth are physiological processes. However these are not free of risks. Critical care in obstetrics has received much attention in recent times. Despite progress in medical field and improvement in available health care facilities, maternal mortality is still high in most of the developing countries¹. Efforts are underway to reduce the incidence of maternal mortality and morbidity. Several maternal morbidities, also known as "near miss" may be a good indicator of quality and effectiveness of obstetric care, as it may identify priorities in maternal care more rapidly than mortality alone². Lack of trained birth attendants, lack of education, low status of women in society, poor families, financial dependency of women and delay in seeking medical treatment in cases of obstetric emergencies are the key factors contributing towards the adverse maternal and perinatal outcomes³.

Worldwide every year approximately 8 million women suffer from pregnancy related complications. Over a half million of them, die as a result. According to recent estimates each year more than 500000 women between the ages of 15-49 years die of the causes related to pregnancy⁴. Majority of these pregnancy related complication occur in developing countries⁵. For every woman who die, at least 20 more suffer injury, infection or disability from maternal causes –

approximately seven million women every year. Seventy five percent of maternal deaths occur during and after childbirth and the postpartum period, are avoidable when woman have access to health care before, during and after childbirth⁶.

Obstetrics patients are usually healthy and free from co-morbidities. Most of them can be managed at the primary health care centre. However, pregnancy and childbirth is not free from complications, some of which may prove to be life threatening⁷. Timely identification of high risk cases prone to land up in such complications as well as identification of patients with such complications and their prompt referral to a centre well equipped to tackle such cases may improve the fetomaternal outcome⁸. The fact that many of the complications responsible for fetal and maternal mortality can't be predicted needs to be emphasised. Various factors responsible for maternal morbidity and mortality such as postpartum haemorrhage, septicemia, disseminated intravascular coagulopathy, obstructed labour and eclampsia can develop suddenly and may surprise even the most experienced obstetricians⁹. It is for this reason that every pregnancy needs to be managed very vigilantly and there must be a system in place for identification and management of any complication associated with pregnancy and childbirth¹⁰.

With this background in mind we conducted this study to evaluate the pattern of pregnancies referred to our department and to study the maternal and fetal outcome in such referred cases.

Materials And Methods:

This was a prospective observational study of 332 obstetrics patients referred to our hospital for various obstetric and fetal complications. The study was conducted after due approval from institutional ethical committee. Informed consent was taken from all the patients. The cases were included on the basis of a predefined criteria and any patient having any of the exclusion criteria was excluded from the study. The demographic data like age, place from where the patient was referred was noted. Gestational age, previous ANC visits, previous ultrasound findings (if available) was noted. General, systemic and obstetric examination was done. Findings were noted. Basic investigations like complete blood count, blood grouping and ultrasound was done in all the patients and findings were noted. The patients were managed according to the set protocol of the institute. Mode of delivery was also noted. Fetal outcome was noted in terms of perinatal outcome, live or stillbirth, birth weight, need for NICU admissions and condition of the baby at the time of discharge of mother and presence of any complications in mother or baby was also noted. The data was tabulated and analyzed using SPSS version 16. Fisher's test and t test were used as tests for significance. P value lower than 0.05 was taken as statistically significant.

Inclusion Criteria:

1) All obstetric cases referred to our tertiary Care Hospital during the study period.

Exclusion Criteria:

- 1) Patient registered in our hospital.
- 2) Patients who refused consent.
- 3) Post-partum referred cases

Results:

Out of the 332 referred cases 265 (80%) cases delivered normally while 38 (11 %) were discharged without delivery with an advice to follow up at an appropriate time. In 29 (9%) patients either abortion occurred or medical termination of pregnancy was done or there was ectopic pregnancy which was managed according to set protocol depending upon the gestational age at the diagnosis.

Outcome of ANC	No of cases	Percentage (%)
Delivered	265	80
Discharged	38	11
Abortion /ectopic	29	9
Total	332	100

Table 1: Outcome of the referred cases.

Out of 265 cases who were delivered at our institute majority of the patients (56 %) babies were delivered by normal vaginal delivery while 116 (44%) delivered by LSCS for various reasons.

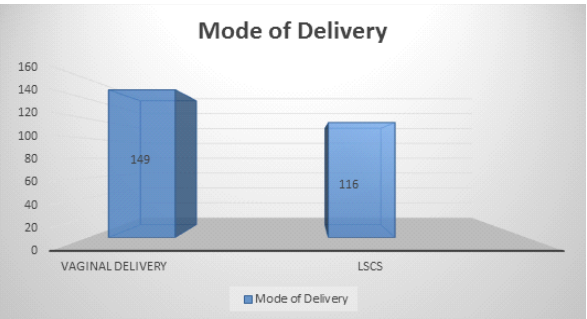


Figure 1: Mode of Delivery in the studied cases.

In the study it was found that the patients had more than one reason for LSCS. 37 patients underwent LSCS due to previous lscs, 19 for fetal distress, 18 for PIH and complications, 12 for malpresentations, 11 for PROM, 10 for IUGR with oligohydramnios each, 10 for non progress of labour, 9 for placenta praevia, 7 for twins, 5 for obstructed labour, 4 for eclampsia, and postdatism each, 3 for failed induction, 2 for rupture uterus, 1 for RH negative pregnancy, anomalous baby, active genital warts each.

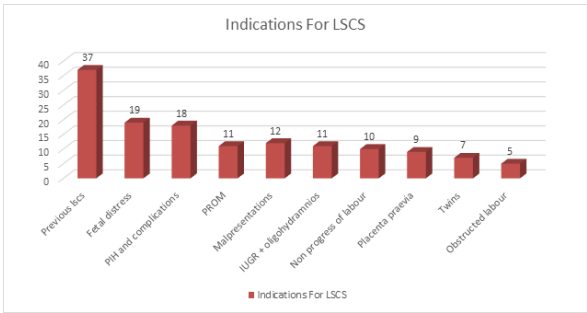


Figure 2: Indications for LSCS in studied cases.

The analysis of the morbidity and mortality patterns of the studied cases showed that Of the total referrals 75 (20%) patients had been given blood transfusions, 38 (10%) required CCU admissions, 98 (27%) were near miss cases. Maternal mortality was seen in 26 (7%) cases.

Maternal morbidity and mortality	No of cases	Percentage (%)
Near miss cases	98	27
Blood transfusions	75	20
CCU admissions	38	10
Maternal death	26	7

Table 2: Maternal Morbidity and Mortality in the studied cases.

In the present study there were 26 maternal deaths. 8 (31%) cases were due to medical disorders complicating pregnancy, 5 (19%) were due to PIH and its complications, 4 (16%) were due to PPH, 3 (11%) were due to sepsis and burns, 2 (8%) were due to post LSCS complication and 1 (4%) case was due to disseminated tuberculosis.

Causes for maternal mortality	No of cases	Percentage (%)
Medical disorders	8	31
PIH and complications	5	19
PPH	4	16
Sepsis	3	11
Burns	3	11
Post LSCS complication	2	8
Tuberculosis	1	4
Total	26	100

Table 3: Causes for maternal mortality in studied cases.

In the study there were total 332 antenatal cases, out of which 265 cases delivered. As there were 13 twin deliveries, the number of total births were 278, out of which 251 (90 %) cases had live birth and 27 (10%) had still births.

Delivered Cases	No Of Cases	Percentage (%)
Live birth	251	90
Still birth	27	10
Total	278	100

Table 4: perinatal outcome of 265 deliveries including 13 twins

Out of the total live births of 251 cases, 68 (27%) babies had NICU admission, and 183 (73%) were healthy babies.

NICU admissions	No of cases	Percentage (%)
Yes	68	27
No	183	73
Total	251	100

Table 5: NICU admission in new born babies.

Out of the 68 babies admitted in NICU, babies 46 (62 %) were discharged and 22 (38%) died. The neonatal mortality rate was found to be 14/ 1000 live births and the perinatal mortality rate was 30/ 100 live births.

Neonatal death	No of cases	Percentage (%)
Yes	22	38
No	46	62
Total	68	100

Table 6: Neonatal Mortality in the studied cases.

In the study there were 332 antenatal cases, out of which 265 cases delivered, there were 251 were live birth and 27 were stillbirth including 13 twin deliveries. Out of the still birth 16 (59%) were macerated still birth and 11 (41%) were fresh still births.

Still birth	No of cases	Percentage (%)
Macerated still birth	16	59
Fresh still births	11	41
Total	27	100

Table 7 – Stillbirths in the studied cases.

There were total 265 deliveries including 13 twin deliveries, out of which 251 were live births and 27 were still births. In the present study, 100 (40 %) of live births were between 2-2.5 kg, 79 (31%) above 2.5 kg, 37(15%) between 1.5-2 kg and 35 (14%) below 1.5 kg.

Weight (kg)	No of cases	Percentage (%)
<1.5	35	14
1.5-2	37	15
2-2.5	100	40
>2.5	79	31
Total	251	100

Table 8: Birth Weights of the live born babies.

Discussion:

The overall LSCS rate in our hospital was found to be 32 %. The LSCS rate in referred cases was found to be 56% .The high caesarean rate among referred cases was due to high risk factors associated with pregnancy in these cases. Rehana Najam et al in her study observed that in 58% of the referred cases LSCS was done and 42% had vaginal delivery¹¹. Vaishali Panchal et al in their study observed that 64% cases delivered by caesarean section and 36% had vaginal delivery¹².

In our study the common indications for LSCS were found to be previous LSCS, fetal distress and PIH. Similar causes for LSCS were documented by the authors like Shamshad et al who found that 20% of the LSCS in referred cases were due to repeat caesarean section, 19% for obstructed labour, 14% fetal distress, 12% failure to progress of labour and 10% for PIH¹³. In another study Umesh sable et al found that 33% of the cases had LSCS due to previous LSCS , 25% due to fetal distress, 11% due to severe PIH ,10% due to failure to progress,9% due to APH and 8% due to breech and CPD each¹⁴. In present study it was found, 38 (10%) cases needed CCU admissions. In developed countries the incidence of ICU admissions for obstetric patients is only 0.2-0.9% due to literacy, awareness and

better health care services but not so in developing countries where patients are referred after the complications have already occurred. Similar admission rates were observed by Rehana Najam et al and Divya Goswami et al who found that approximately 12 % needed ICU admissions¹⁵.

In the present study the maternal mortality 7%.8 (31%) cases were due to medical disorders complicating pregnancy, 5 (19%) due to PIH, 4 (16%) due to PPH, 3(11%) due to sepsis and burns each, 2 (8%) due to post LSCS complication and 1(4%) due to disseminated tuberculosis. Haemorrhage and hypertension still remains the major causes for maternal mortality even in a tertiary care institute. It is because high risk factors are not identified in the early stage at peripheral hospitals, by the time patient develops complications she is referred from lower level to higher referral centres which prolongs the delay in treatment. By the time patient reaches our hospital they are in critical condition and succumb. Similar study conducted by Rehana najam et al found maternal mortality rate to be 4% and the commonest cause was found to sepsis secondary to septic abortion. Manisha bakliwal et al in her study had reported a maternal mortality rate of 5%. The major cause was PIH followed by PPH and sepsis¹⁶.

In the present study there were 332 antenatal cases .Out of them, 265 cases delivered including 13 twins, resulting in 278 babies. Out of the 278 babies, 2531 (91%) were live births and 27 (9%) were still births. The results are comparable with above studies. Rathicharu et al in her study found that 90% were live births and 9 % were stillbirths¹⁷.

In the present study 47 % of the NICU admissions were for low birth weight / preterm, 28 % for respiratory distress, 15 % for congenital anomaly, 7 % for PROM, 3 % for neonatal jaundice. The high rate of NICU admission is due to preterm delivery and preterm induction of labor due to maternal high risk factor. In the present study it was found that there were 251 live babies, out of which 68 (27%) needed NICU admission and 183 (73%) babies were shifted to mothers side Similar findings were seen in an study done by Citres Y et al¹⁸.

In the present study there were total 251 live births, and 68 were admitted in NICU, out of the 68 babies 22 babies expired and 46 were discharged. The neonatal death rate is 8%.The results are comparable and high neonatal death rate is due to prematurity due to increase in preterm deliveries nowadays and also due to preterm induction of labour due to maternal high risk factors. In our study out of the 251 live births, 102 (40%) are between 2-2.5kg, 79(31%) babies were above 2.5 kg , 37(15%) were babies between 1.5-2 kg and 35(14%) are below 1.5 kg., 29% of the babies were low birth weight babies. This was due to preterm deliveries by induction of labour due to high risk factors associated. Similar findings were reported in the studies conducted by Allanson ER and Mmbaga BT et al^{19,20}.

Conclusion:

Referral to a higher centre is a critical step in management of obstetrics cases. Proper referral at an appropriate time may be associated with decreased maternal and neonatal morbidity and mortality. The fact that many of such complications can't be predicted makes it mandatory that every pregnancy is considered to be having a potential to get complicated and managed accordingly. Well organised first referral centre with better transportation facility, availability of blood bank facilities, anesthetic facilities, CCU and specialist in the field of obstetrics at referral unit will definitely reduce maternal and perinatal mortality.

Conflict Of Interest: None

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