

A Prospective Observational Study of Maternal and Perinatal Outcome of Referred Patients in Tertiary Care Health Centre

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Abstract:

Introduction: The referral system is particularly important in pregnancy and childbirth for providing access to Emergency Obstetric Care. Timeliness and appropriateness of referral is an important factor in the ultimate outcome of the patients.¹ Linking the primary, secondary and tertiary levels of care are an essential element of primary health care.²

Materials and Methods: Present study was a two years prospective study in the department of obstetrics and gynecology of a PG and UG teaching tertiary care centre, M.G.M Medical College and hospital, Jamshedpur from January 2015 to January 2018. Patients referred to the hospital in third trimester of pregnancy during study period. Exclusion criteria included Post-partum patients, Early pregnancy complications (<28wks), Booked patients at tertiary care centre.

Results: After thorough analysis of data following observations are put forwarded: Total no of admissions were 9551 out of which 1468 were the referred cases. The proportion of referral cases to our tertiary care institute from periphery (outside the city) was 15.37%. Maximum numbers of cases in present study were in the age group of 20-30 years comprising 86.98% of total cases. Majority of referral cases were primigravidae that was 766 in number (52.17%).

Conclusion: Health education to the community, better antenatal care up to grass root level, emergency intranatal care, availability of services of skilled birth attendants at the time of child birth, well organized first referral center with better transportation facility, availability of blood round the clock, anesthetic facilities and availability of specialist in the field of obstetrics at the referral unit will definitely reduce maternal morbidity and mortality.

Key Words: Health education, referral system, Emergency Obstetric Care, intranatal care

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I. Introduction

The referral system is particularly important in pregnancy and childbirth for providing access to Emergency Obstetric Care. Timeliness and appropriateness of referral is an important factor in the ultimate outcome of the patients.¹ Linking the primary, secondary and tertiary levels of care are an essential element of primary health care.²

Although most obstetric complications (defined as acute conditions such as postpartum hemorrhage, sepsis, eclampsia, and obstructed labor that can cause maternal death cannot be predicted, the majority can be treated with timely provision of a package of evidence-based interventions known as emergency obstetric care (EmOC).^{3,4}

The availability of EmOC is considered to be an indicator of how well a health system is prepared to manage conditions leading to acute maternal morbidity and mortality.⁵⁻⁷ Timing process is critical in preventing maternal death and disability. Maternal mortality can be significantly reduced if a system is in place to recognize problems promptly and to transport a woman to a health facility where she can receive appropriate and timely treatment.⁸⁻¹⁰

With this background, present study was undertaken to evaluate the pattern of obstetric cases referred to tertiary teaching hospital and maternal outcomes amongst referred patients.

II. Materials And Methods

Present study was a two years prospective study in the department of obstetrics and gynecology of a PG and UG teaching tertiary care centre, M.G.M Medical College and hospital, Jamshedpur from January 2016 to January 2018.

Study population:

Patients referred to the hospital in third trimester of pregnancy during study period.

Study design:

Prospective observational study

Exclusion criteria:

- Post-partum patients
- Early pregnancy complications (<28wks)
- Booked patients at tertiary care centre.

Data collection:

- Patient arrival time to admission room, detailed clinical history and place and time of referral, type of transport, causes of referral were studied. Thorough history was taken.
- Complete physical and obstetric examination was done.
- Basic investigations and Case specific investigations were carried out as mandated by clinical condition of the patient.

Maternal Outcome:

Management of the patient was documented in detail. Mode of delivery was noted i.e., whether vaginal or operative or conservative management. Any maternal morbidity or catastrophe was noted. All this was done to note maternal morbidity and mortality. To know Fetal outcome APGAR score was noted, if needed NICU admission cause for it was noted along with that follow-up was done. In cases of still birth and early neonatal deaths causes were noted. Proper consent of the study population was taken.

III. Results

After thorough analysis of data following observations are put forwarded: Total no of admissions were 9551 out of which 1468 were the referred cases. The proportion of referral cases to our tertiary care institute from periphery (outside the city) was 15.37%.

Maximum numbers of cases in present study were in the age group of 20-30 years comprising 86.98% of total cases (Fig no 2). Majority of referral cases were primigravidae that was 766 in number (52.17%) .

In the present study, 59.60% cases were from distance of 50-150km reflecting major population catered by more than 100 km to seek an emergency obstetric care which is an important contributing factor for maternal & perinatal outcome.

In present study, there was unavailability of ambulance in 69.34% of cases for transport (Table 2). In present study majority of patients (76%) arrived to the hospital within 8 hours of reference. The patients who reported to hospital >12 hours of referral were 5.58% in present study. In the present study, caesarean section rate was 22.75% in the referred cases. 7.76% of the total referred cases were managed conservatively & were discharged.

Preeclampsia & related conditions were the major indication of referral to the tertiary care institute comprising 22.27% of the cases. This is followed by anaemia and in malpresentations commonest being breech.

Total maternal deaths were 40.Hypertensive disorders (35%) constitute the leading cause of maternal deaths followed by haemorrhage (20%) among the direct causes. Among the indirect causes anaemia has been the leading cause of maternal death. (Fig no 4) Total no of still births in our study were 147(10.85%) and NICU admissions is 143(10.5%) and no of healthy babies were 1064 (78.58%).

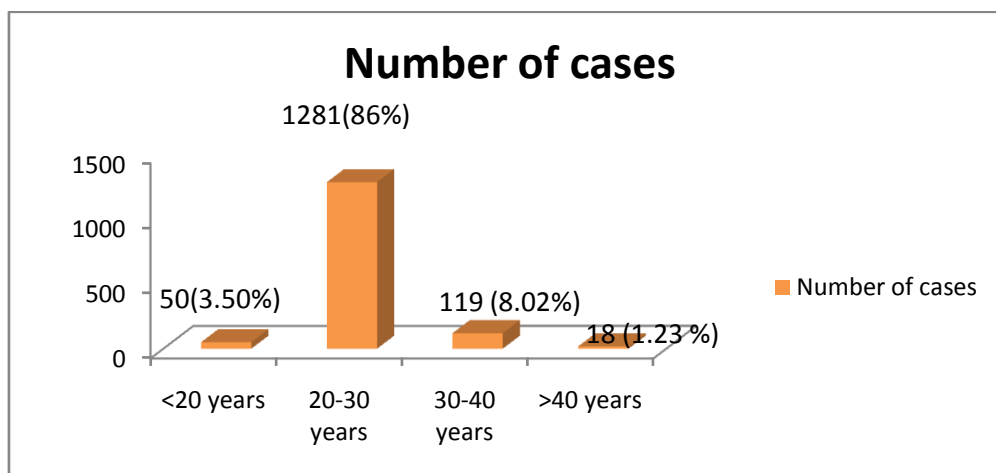


Figure 1: Age wise distribution

Distance Kilometers (Km)	No. of patients in present study
<50	517 (35.2%)
50-150	875 (59.6%)
>150	76 (5.17%)

Table 1: Distance to referral center

Mode of transport	No. of cases	%
Hospital ambulance	450	30.65
Private vehicle	1018	69.34
Total	1468	100

Table 2: Distribution of cases according to mode of transport

Mode of delivery	Present study	Percentage
Vaginal delivery	1020	69.48%
Spontaneous	156	10.52%
Induced	864	58.855%
Caesarian section	334	22.752%
Emergency	298	20.299%
Elective	36	2.45%
Undelivered (Conservative management)	114	7.765%
Total	1468	100%

Table 3: Distribution of cases according to mode of Delivery

Causes of referral	No. of patients	Percentage
Preeclampsia	327	22.27%
Anaemia	265	18.05%
Malpresentations	223	15.19%
Prev LSCS	112	7.62%
PPROM	91	6.2%
APH	90	6.13%
Fetal distress	77	5.24%
Preterm labour	57	3.8%
CPD	54	3.7%
IUFD	29	1.9%
Postdatism	21	1.4%
Hepatitis	17	1.15%
Non progress of labour	17	1.15%
Rupture Uterus	14	0.95%
Oligohydramnios	13	0.88%
Twin gestation	10	0.66%
Rh-negative	9	0.61%
Polyhydramnios	8	0.54%
BOH	7	0.47%
Pregnancy with gynaec disorders	7	0.47%
Malaria	6	0.40%
Congenital malformation	6	0.40%
Heart disease	4	0.27%
Arrest of after coming head of breech	2	0.13%
Retained	2	0.13%

Table 4: Distribution of Cases According To Causes of Referrals

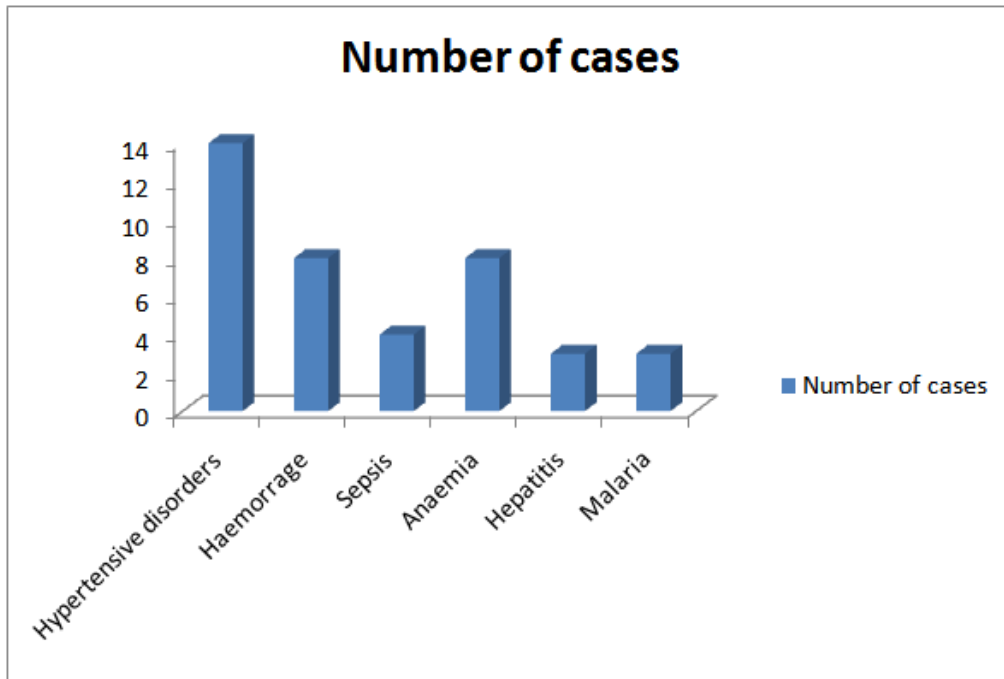


Figure 4: Causes of Maternal Deaths

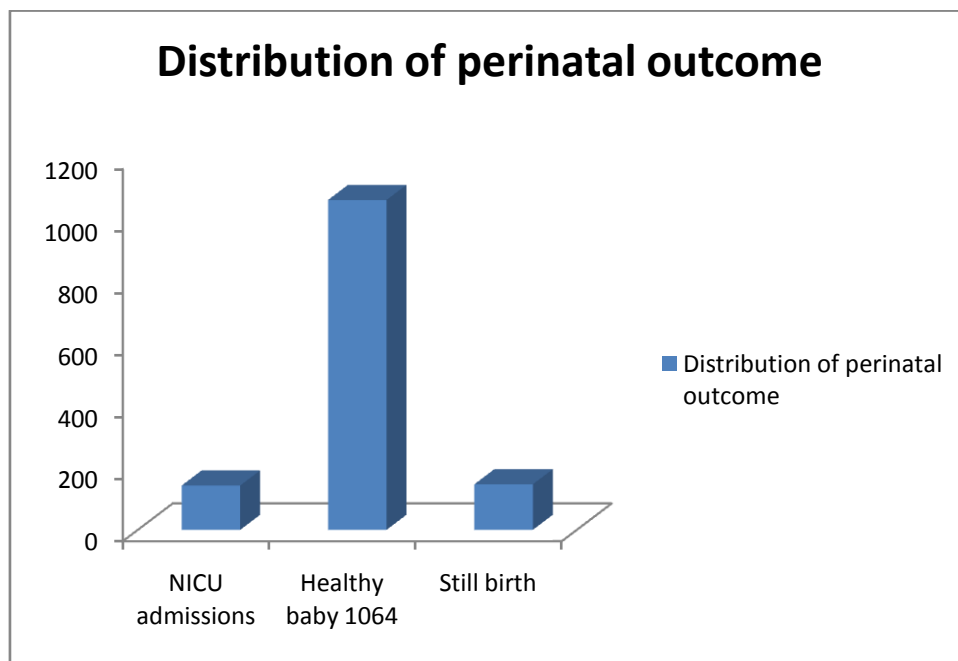


Figure 5: Distribution of Perinatal Outcome

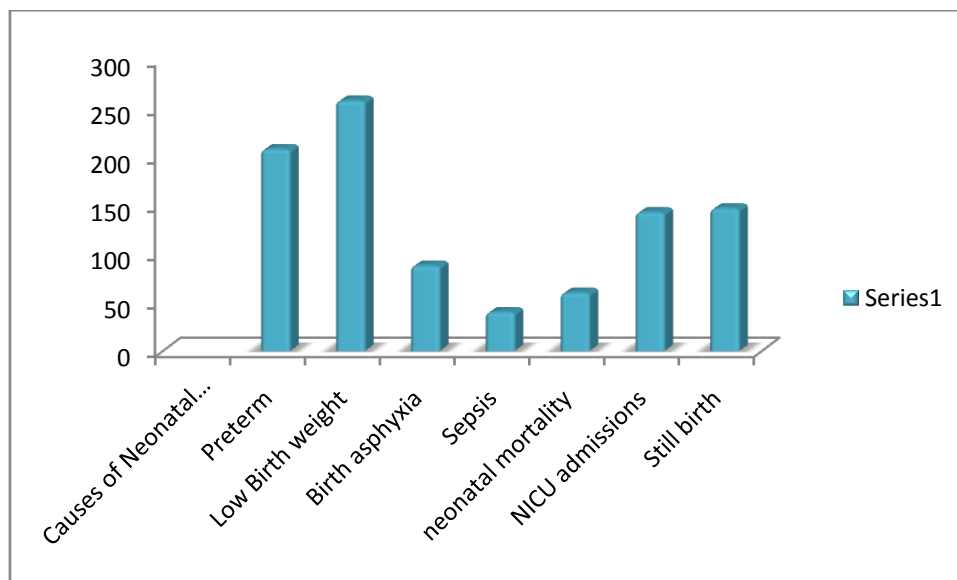


Figure 6: Causes of Neonatal Morbidity and Mortality

IV. Discussion

The death of woman in childbirth is a tragedy, an unnecessary and wasteful event that carries with it the huge burden of grief and pain. Pregnancy is not a disease and pregnancy related morbidity and mortality are almost preventable. Timeliness and appropriateness of referral are a challenge to obstetricians, since the delay in referral affects the maternal and perinatal outcome adversely, hence identification of at risk patients and obstetric emergencies and timely referral is of immense importance. Puri Alka, Yadav Indra, Jain Nisha in their study noted 24.16% of cases were referred. The proportion of referral cases to our tertiary care institute was 15.37%.

In present study majority of patients (59.74%) arrived to the hospital within 8 hours of reference while it was 49% in the study done by Rath *et al.*; [10]. The patients who reported to hospital >12 hours of referral were 5.58% in present study while in the study done by Rath *et al.*; [10] were 25%. They have to travel long distances and sometimes it becomes very difficult to save the life of the patient. Time interval of reference and reporting depends not only on availability of transport system and distance between the referral and tertiary health care centre but also on patients and her relatives' attitude, awareness and socio-economic status and that affects directly fetomaternal outcome. Significant no of patients underwent vaginal delivery (69.48) and only few of the referred patients have been taken for LSCS (22.75%). Commonest indication of LSCS being the fetal distress followed by malpresentation.

7.76% of the total referred cases were managed conservatively & were discharged. Here arises a concept of Day care management of referral cases at tertiary care institute which might be helpful in reduction of burden of tertiary care institute. Sorbye *et al.*; [11] found that referral status contributed substantially to the increased caesarean section rate, which was 55% in formally-referred. In present study, 22.75% underwent caesarean section, we can conclude that rate of caesarean section is substantially high in referral cases.

In present study the highest no of cause of referral is due to preeclampsia (22.27%) anaemia (18.05%) while in the study done by Patel HC *et al.*; [12] causes of referral were preeclampsia(16%), MSL(5%). This may be not only due to unavailability of blood transfusion facilities in case of severe anaemia at primary health care and community health care, but also cost factor in case of referral from private sectors.

Maternal anaemia is not only affecting the maternal health in antenatal period but also reflected on intrapartum and postpartum period. So, referral in antenatal period improves maternal outcome. Poor nutritional status and inadequate spacing of pregnancy compounded by inability of poor patients to have adequate diet due to economic reasons leads to high rate of anaemia in pregnancy leading to many maternal morbidities.

It can be prevented if early and adequate antenatal visits are taken by the patients. For this improvement of awareness of early antenatal visit is required. Not only self-awareness but health education and awareness by mass media and non-government organizations can improve the health and social status of women in rural areas.

V. Conclusion

Timely referrals with detailed referral slips imparting information regarding treatment received at the referring hospital might help in early and optimal intervention so as to reduce maternal and perinatal mortality. Moreover, a structured referral system would help both patient and doctor in providing essential lifesaving care.

Hypertensive disorders of pregnancy have been the commonest cause of referral among high-risk obstetric patients, which can be better dealt at tertiary care center. Also, administration of 1st dose of magnesium sulphate must be done in all cases of eclampsia and severe preeclampsia prior to referral.

Health education to the community, better antenatal care up to grass root level, emergency intranatal care, availability of services of skilled birth attendants at the time of child birth, well organized first referral center with better transportation facility, availability of blood round the clock, anesthetic facilities and availability of specialist in the field of obstetrics at the referral unit will definitely reduce maternal morbidity and mortality.

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