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Original Research Article

Analysis of referred cases in a tertiary care center in Mysuru, Karnataka

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ABSTRACT

Background: Pregnant women are at high risk for life threatening complications throughout the pregnancy and during delivery. Early detection of complications and prompt referral to higher level of care can reduce associated adverse maternal outcome. Improvement in quality of maternal child health care at primary health centre, community health centre level, regular training of healthcare provider in emergency obstetrics care is required to curb unnecessary referrals and consequently reducing fetal maternal morbidity and mortality.

Methods: This is a observational study conducted in the department of obstetrics and gynaecology, at a tertiary care hospital attached to MMCRI mysuru. Patients are referred from nearby primary health centre, community health centre, district hospital and private hospitals. All referred antenatal and intra- natal patients to our center of >24 weeks of gestational age were studied.

Results: During this study period of 1 year, there were about 9234 admissions of obstetric cases out of which 6535 (70.7%) were referred cases. Maximum cases i.e., 4300 (65%) were in the age group of 20-30 years age group. The most common indication for referral was PIH-2091 (32%), preterm labour (Lack of NICU facility)-1110 (17%), followed by fetal distress-718 (11%), lack of maternal ICU facility-8%, lack of cardiologists-4%. Out of the total referred cases, 2287 (35%) delivered vaginally, 3332 (51%) delivered by lower segment caesarean delivery but the remaining 916 obstetric cases did not have the follow up. Maternal morbidity was seen in 2854 (43%) of which requiring ICU admissions in 12%, PPH seen in 7%, requiring dialysis in 3%, puerperal sepsis in 1.8%, wound gaping in 2.1%, Total maternal death were-4.78% neonates were shifted to mother side, whereas 18% were admitted to NICU.

Conclusions: Referral helps healthcare seekers to reach a high level of care in the health system in a span of time. Identification of high risk factors by health personnel and timely decisions about intervention is important. Present study showed that timely referral is crucial for a satisfactory maternal and fetal outcome. In order to reduce unnecessary referral and burden on tertiary care hospitals, strengthening of existing first referral units (FRU) is necessary to provide better services and will help in achieving goal of ideal maternal mortality rate and neonatal mortality rate.

Keywords: Maternal mortality rate, Maternal outcome, Neonatal mortality rate, NICU, Referral emergencies

INTRODUCTION

Pregnant women are at high risk for life threatening complications throughout pregnancy and during delivery as well. Most of these complications are unpredictable. Skilled medical interventions such as blood transfusions, caesarean delivery, expert surgical team, anaesthesia team,

medicines, transport facilities round the clock are required to prevent these complications. Referral services for identification and referral of high risk pregnancies are an integral part of maternal and child health services. The 3 tier health care delivery system was conceived in such a manner that the patients in need of a higher level of expertise and care could be referred accordingly from

primary to secondary directly to tertiary level centre. Due to lack of awareness and absence of regular antenatal care, the critically ill patients are referred late and sometimes in moribund condition with multiple organ damage. Timeliness and appropriateness of referral is an important factor in the ultimate outcome of the patients linking the primary, secondary and tertiary levels of care is an essential element of primary health care.¹

A referral system offers women some degree of health care at every levels of health care system while linking the different levels through an established communication transport system.² A referral should rather be conceptualized as an active process which begins at door step of the patient's household and which in theory would end at the same place after transitory journey to the referral facility. Although most obstetric complications (defined as acute conditions such as postpartum hemorrhage, sepsis, eclampsia and obstructed labor) can be treated with timely provision of a package of evidence based interventions known as emergency obstetric care (Em OC).

Emergency obstetric care EmOC refers to elements of obstetric care needed for management of complications during pregnancy, delivery and postpartum period, skilled personnel, equipment and support services. EmOC services are of paramount importance in reducing maternal mortality and morbidity.³ It is still recommended to electively refer pregnant woman with previous caesarean section, hypertension, severe anaemia, diabetes mellitus, breech presentation, transverse lie and multiple gestation for delivery before any complication arise to a well-equipped health care centre where all possible complications can be managed well.

Theoretically, a timely screening and transfer of pregnant women at risk under favorable conditions might reduce the rate of maternal death significantly.⁴ We need to evaluate this referral system in order to design medical and community-based interventions for mother and child more effectively. In order to ascertain the frequency and epidemiological profile of obstetric referrals in a South Indian tertiary care center and to identify the primary indications for such transfers during the labor and delivery phases, we carried out this study.

All women should be attended antenatally. The purpose of antenatal visit is to identify high risk patients and provide skilled care timely. The aim of antenatal care is to achieve at the end of pregnancy is a healthy mother and a healthy baby. Emergency obstetric referral should be carried out to avoid maternal and fetal morbidity and mortality. Thus, referral system is an important component of health system. Aim and objective of this study is to evaluate the spectrum of pregnancy related referrals to Cheluvamba hospital attached to MMCRI-a tertiary care centre. Aim of the study was to evaluate the spectrum of pregnancy related referrals to our hospital and their fetomaternal outcome.

METHODS

This is a retrospective study done using medical records of antenatal women admitted in Cheluvamba Hospital, OBG Department, MMCRI Mysuru. Over a period 12 months period (September 2022 - September 2023). All data regarding patient's status, indication for referral, socio demographic details, any medical co morbidities, gestational age, mode of delivery, neonatal outcome, birth weight, stay in NICU, maternal outcome were noted. Feto maternal prognosis explained to relatives and patient. Data were entered in a computer based spreadsheet. Categorical variables such as age-category, maternal outcome, are presented as proportion and were analysed using statistical software.

Inclusion criteria

All referred antenatal and intra-natal patients to our tertiary care institute of more than 24 weeks gestational age.

Exclusion criteria

Referred cases of less than 24 weeks gestation, postpartum referrals and gynaecological referrals.

RESULTS

During this study period of 1 year, there were about 9234 admissions of obstetric cases out of which 6535 (70.7%) were referred cases (Table 1). Maximum cases i.e., 4300 (65%) were in the age group of 20-30 years age group. The referral locations to our hospital are as shown in Table 2.

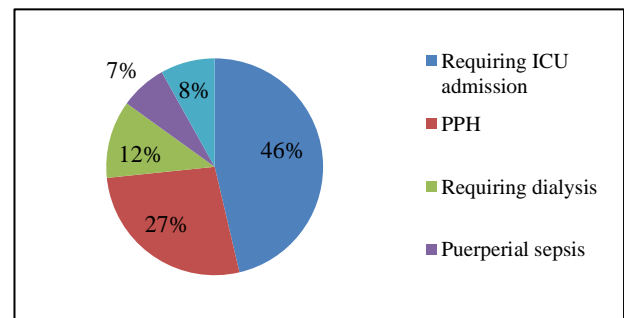


Figure 1: Maternal morbidity.

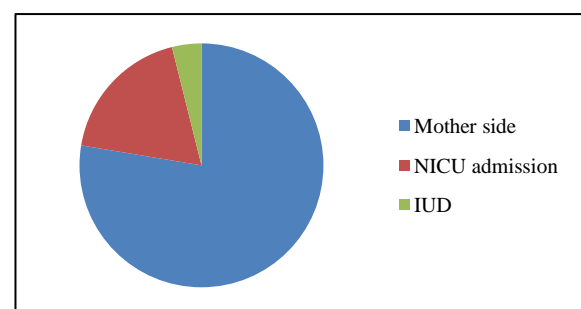


Figure 2: Neonatal outcome.

The most common indication for referral was PIH-2091 (32%), preterm labour (Lack of NICU facility)-1110 (17%), followed by Fetal distress-718 (11%), Lack of maternal ICU facility-8%, Lack of cardiologists-4% (Table 3). Out of the total referred cases, 2287 (35%) delivered vaginally, 3332 (51%) delivered by lower segment caesarean delivery (Table 4) remaining 916 obstetric cases did not come for the follow up. Maternal morbidity was seen in 2854 (43%) of which requiring ICU admissions in 12%, PPH in 7%, requiring dialysis in 3% puerperal sepsis in 1.8%, wound gaping in 2.1% (Figure 1). Total maternal death were-4.78% neonates were shifted to mother side, whereas 18% were admitted to NICU (Figure 2).

Table 1: Number of admissions and referral.

Total no. of admissions	9234
Total no. of referred cases	6535

Table 2: Location of referral.

Location of refer	%
PHC	10.80
CHC	35
DH	30.80
Medical college	17
Private hospital	6.60

Table 3: Causes of referral.

Causes	N
Hypertensive disorders of pregnancy	2091
Lack of NICU	1110
Fetal distress	718
Lack of maternal ICU	522
Lack of super specialty	261

Table 4: Mode of delivery.

Mode	%
Vaginal delivery	43
LSCS	57

DISCUSSION

Pregnancy is not a disease and pregnancy related morbidity and mortality are almost preventable, if proper antenatal, intra and postnatal care is taken. Timeliness and appropriateness of referral is of immense importance for good maternal and perinatal outcome.

Due to lack of awareness and absence of regular antenatal care, the critically ill patients are referred late and sometimes in moribund condition with multiple organ damage. Timeliness and appropriateness of referral is an important factor in the ultimate outcome of the patients linking the primary, secondary and tertiary levels of care is an essential element of primary health care. A referral

system offers women some degree of health care at every levels of health care system while linking the different levels through an established communication transport system.

The WHO estimates that at least 88-98% of maternal deaths can be averted with timely access to existing referrals system. Timeliness and appropriateness of referral are a challenge to obstetricians since the delay in referral affects the maternal and fetal outcome adversely. Increased rate of caesarean sections with improper indications, sections done at patients' request or relatives' apprehension and compulsion are main reasons for increased rate of post caesarean pregnancies apart from delayed referrals of patients with meconium-stained liquor and fetal distress. Lack of knowledge, poor peripheral care and lack of regular antenatal checkups increased the rates of complications in cases of preeclampsia. 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. Unavailability of blood transfusion facilities in case of severe anaemia at PHC's and CHC's may also contribute to such high percentage of patients being referred to our tertiary care hospitals. In this study, Maximum referred cases i.e., 65% were in the age group of 20-30 years. The most common indication for referral was Hypertensive disorders in pregnancy-32%.

Gupta et al, reported that majority of cases were referred for anemia (18.05%), hypertensive disorders of pregnancy (22.27%) and malpresentations (15.19%).⁵ Whereas in our study the most common indication for referral was hypertensive disorders in pregnancy-2091 (32%), preterm labour (Lack of NICU facility)-1110 (17%), followed by Fetal distress-718 (11%), Lack of maternal ICU facility-8%, Lack of cardiologists-4%

Rathi et al, noted that majority of cases were referred for hypertensive disorders of pregnancy (26%), which was the same in our study which was approximately 32%.⁶ preterm labor (26%) and medical disorders complicating pregnancy (21%). Maskey S et al, showed in a study that most common diagnosis at referral was medical disorders complicating pregnancy (38%), among which cardiac disease accounted for (20%), followed by hypertensive disorders (17%).⁷ Whereas in our study most common diagnosis at referral was hypertensive disorders in pregnancy.

Out of the total referred cases in our study, 35% of mothers delivered vaginally, 51% delivered by C-section remaining 916 obstetric cases did not come for the follow up. Maternal morbidity was seen in 2854 (43%) mothers of which requiring ICU admissions in 12%, PPH seen in 7%, requiring dialysis in 3%, puerperal sepsis in 1.8%, surgical site infection in 2.1%. In this study, 77% neonates were shifted to mother side, whereas 18% were admitted to Neonatal ICU and 4% were Intra uterine fetal demise.

CONCLUSION

Referral is a coordinated movement of healthcare seekers through the health system to reach a high level of care and is time befitting. In the present study, majority of referrals were from rural areas and most of them had poor knowledge of existing antenatal services in rural areas. Health illiteracy and ignorance regarding healthcare requirements and unavailability of proper healthcare facility came out to be a major contributor of poor pregnancy outcome. By providing good antenatal care, availability of blood products, well organized referral centre, timely identification of high risk will reduce fetal maternal morbidity and mortality.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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