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Original Research Article

A study of the causes of referral of obstetric cases in a tertiary care centre and its outcome

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ABSTRACT

Background: This study aims to evaluate the frequency, causes, and outcomes of obstetric referrals at a tertiary care hospital.
Methods: An observational study was conducted at Civil Hospital Asarwa, B. J. Medical college Ahmedabad, over six months from December 2021 to May 2022. All referred cases for obstetrics indications were analysed for cause of referral, the facility from which they were referred their condition and outcome. Maternal outcomes in the form of maternal morbidity and mortality were noted.
Results: Out of a total of 3010 delivered patients, 229 (9.6%) cases were referred patients. The 87 out of 229 (37.9%) cases were already complicated when received at civil hospital Ahmedabad. Most of the cases 196 (88%) did not receive any treatment at referral hospital before being referred. Only 21.4% patients were referred with referral slips/chit having adequate information. The 183 (18.04%) patients required intensive care unit admission, and 5 maternal deaths were recorded out of those referred (2.1%).
Conclusions: The majority of referrals were from rural areas (36%) and medical colleges (18.9%). Such cross referrals should be minimised so as to decrease the burden on tertiary centres. Healthcare workers should be trained in essential and emergency obstetric care which will help in reducing unnecessary referrals, morbidity, and mortality.

Keywords: Referral, Obstetric, Maternal mortality, Maternal morbidity, Tertiary centre

INTRODUCTION

A referral is defined as the process by which a health-care provider at one level of the health system, lacking adequate resources such as drugs, equipment, or expertise to manage a particular clinical condition, seeks assistance from a facility with better or different resources at the same or a higher level of care (WHO).[1] Referral services constitute a vital component of the health-care system, as timely referral of high-risk cases has a substantial impact on reducing maternal morbidity and mortality.

Early identification of risk factors at peripheral health facilities, coupled with effective coordination and prompt management at higher-level centers, is essential in the current health-care scenario to achieve further reductions in maternal deaths. Despite sustained efforts to strengthen referral mechanisms in India, several challenges continue to impede their effective functioning. Historical data, such as that from the National Family Health Survey (NFHS), has long underscored the challenges in rural healthcare delivery and maternal outcomes.[2-5] These include overpopulation, unequal distribution of specialist doctors, inadequate motivation among existing health-care personnel, and insufficient guidance and training for primary-level health-care providers.

The health-care delivery system is structured to promote initial contact at the primary level, with escalation to higher levels of care based on clinical necessity, thereby

reducing both institutional and patient-related costs. However, in many countries, patients frequently bypass primary health-care facilities and seek care directly at tertiary centers, resulting in an increased burden on higher-level institutions.[3] Consequently, despite ongoing initiatives by health-care providers and organizations to improve service delivery and reduce maternal mortality, maternal mortality rates remain high in many developing nations.

Although India achieved a maternal mortality ratio of 97 according to the 2018-2020 data, this figure continues to be a cause for concern.[2] Among the contributing factors, deficiencies in the referral system at the state level cannot be overlooked.

METHODS

All the referred cases for obstetrics indications were analysed for cause of referral, the facility from which they were referred, their condition and outcome for a period of 6 months from December 2021 to May 2022, in Civil hospital Ahmedabad.

Inclusion criteria

All referred antenatal and intra-natal patients to our tertiary care institute of more than 12 weeks gestational age were included in the study.

Exclusion criteria

Referred cases of less than 12 weeks booked gestation, post-partum D and E and gynaecological referrals were excluded.

Detailed history was taken. Proper data was obtained on previous facilities visited by the patients and whether or not she received any prior treatment.

Thorough study of previous check-up and case sheets was done if available with the patient or relative.

Relevant investigations were done i.e. complete physical and obstetric examination, basic investigations like complete blood counts (CBC), blood grouping, obstetric ultrasound, case specific investigations carried out as mandated by clinical condition of the patient.

Management of the patients was documented: Conservative or interventional.

Mode of delivery was noted down: vaginal or operative.

The neonatal outcome was documented as: term/preterm/live/stillbirth/birth weight/stay in neonatal intensive care unit (NICU).

Maternal outcomes in the form of maternal morbidity and mortality were noted.

RESULTS

According to our study out of a total of 3010 delivered patients, 229 (9.6%) cases were referred patients. The 87 out of 229 (37.9%) Cases were already complicated when received at civil hospital Ahmedabad. Most of the cases 196 (88%) did not receive any treatment at referral hospital before being referred. Only 21.4% patients were referred with referral slips/chit etc., having adequate information. The 183 (18.04%) patients required intensive care unit admission. Five maternal deaths were recorded out of those referred (2.1%). As depicted in the Figure 1 below, out of a total of 3010 delivered patients at civil hospital Ahmedabad, 229 (9.6%) cases were referred patients.

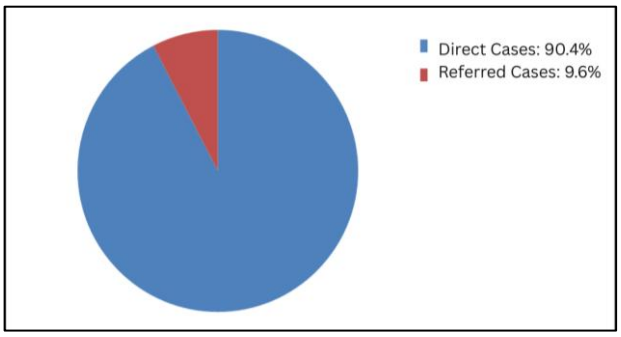

Figure 1: Number of cases.

As seen in below Figure 2 bar chart out of 229 referred patients, the maximum number of referred cases i.e. 86% of the cases were referred for obstetric reason and other related reasons like physician opinion, cardiologist opinion, financial problems and non-availability of NICU. 1.7% of the cases were referred for non-availability of doctor and a total of 12% cases were referred for non-availability of blood and blood products.

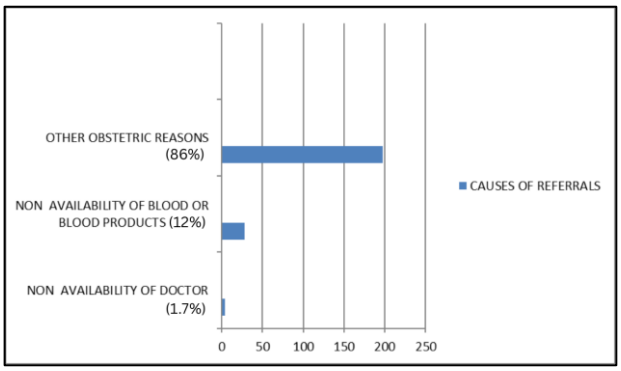

Figure 2: Causes of referrals.

It is depicted in the pie chart (Figure 3) below that the majority of cases were referred from CHC (41%) followed by medical colleges (15%). The other majority of cases were private hospitals. The district hospitals (11%), corporation hospitals (5%) and PHCs (13%) made the remaining number of cases.

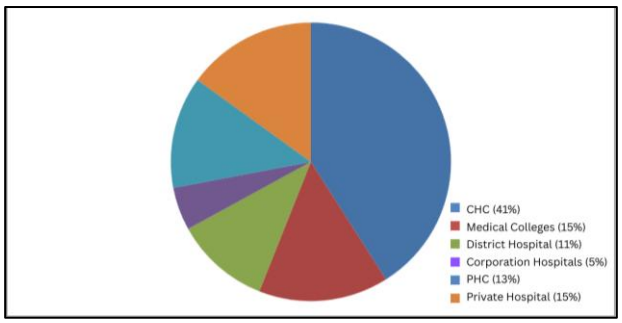

Figure 3: Type of referral centres.

As we can see in Figure 4, Out of the 229 referred cases, about 83 cases were already complicated when received at our facility. That is approximately 38% of the cases. Maternal deaths occurred in 2% of the referred cases and 6% of the complicated referral cases received. This data is depicted in a bar chart below.

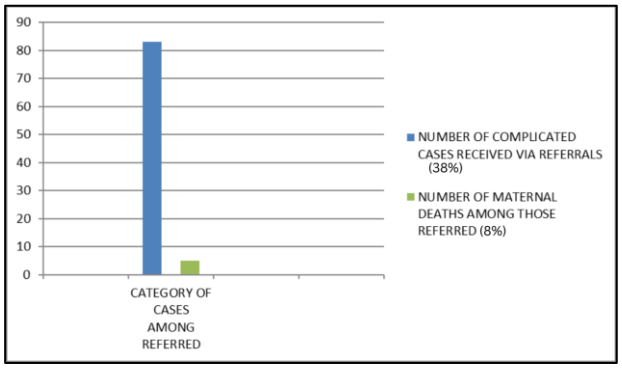

Figure 4: Category of cases among referred.

Among the cases of maternal mortality in our study group, 2 deaths were in a case of severe pre-eclampsia patient succumbed to death due to cardiorespiratory failure as a result of pulmonary oedema. 1 mortality case was due to peripartum cardiomyopathy in a patient with outside LSCS. 2 patients came with hypovolemic shock and DIC in case of PPH in outside delivered patient resulted in mortality.

DISCUSSION

According to our study out of a total of 3010 delivered patients, 229 (9.6%) cases were referred patients. The 87 out of 229 (37.9%) cases were already complicated when received at civil hospital Ahmedabad. Most of the cases 196 (88%) did not receive any treatment at referral hospital before being referred. Only 21.4% patients were referred with referral slips/chit etc., having adequate information. 183 (18.04%) patients required intensive care unit admission.[6,7]

As compared to the study of Marwah et al maximum women (90.6%) were referred without any prior communication with a referral slip, most of which were lacking proper diagnosis and documentation (~40%).[8] In this study of Marwah et al there were a total of 6,851 obstetric ICU admissions during the study period, out of which 3,220 (47% referral rate) were referral cases. In our study, the majority of referrals were from rural areas (36%) and from medical colleges of Ahmedabad and nearby cities (18.9%). This is in contrast to the study by Rathi where 67% of patients were from urban areas and 33% from rural areas.[9,10] In the study by Patel et al out of 155 referrals, there were 37 (23.9%) antenatal, 100 (64.5%) intranatal, and 18 (11.6%) postnatal referrals.[9] These observations regarding the burden of unbooked and complicated referrals parallel the findings of Bindal et al and Aggarwal et al in other tertiary centers.[11-14]

In our study, 56% delivered vaginally whereas caesarean sections were performed in 32% of the cases for obstetric indications. About 12% of patients were managed conservatively for conditions like severe anaemia, thrombocytopenia, or PPH. This can be compared with the study of Goswami et al in which out of the total referred cases, 48% had vaginal delivery, 28% had caesarean section and 24% were managed conservatively.[4] However, in the study by Mahendra out of 135 referred cases, 106 (78.51%) delivered and 18 (13.3%) were treated conservatively.[7] Analyzing the spectrum of referral patterns, as emphasized by Devineni and Sodumu, is crucial for upgrading and managing such obstetric care requirements.[15]

In our study out of 229 referred patients, the maximum number of referred cases (86%) were for obstetric reasons and other related reasons like physician opinion, cardiologist opinion, financial problems, and non-availability of NICU. 4 cases were referred for non-availability of doctor and a total of 12% of cases were referred for non-availability of blood and blood products. Comparably, non-availability of speciality services was found in 49% of cases by Sharma et al while non availability of blood transfusion facilities was reported by 60% of patients in the same study.[6] In the present study, approximately 13% of cases were referred due to non-availability of blood and doctors; this can be compared to the study conducted by Goswami et al where 16.87% of the cases were referred for the same reason.[4] This highlights the urgent need to address the lack of specialized services and blood availability at peripheral centers, a sentiment strongly echoed by Shilpa and Anand.[16]

In our study, 5 maternal deaths were recorded out of those referred (2%). There were 3 (0.79%) maternal mortalities in the study of 380 referred cases in one year duration by Sabale et al.[11] Among the cases of maternal mortality in our study group, 2 deaths (33%) were in a case of severe pre-eclampsia. 17% of mortality cases were due to peripartum cardiomyopathy in a patient with outside LSCS. 2 patients came with (33%) PPH in outside delivered patient resulted in mortality. In the Poornima et al study, the maternal mortality rate was 7%.[12] Of these, 8 (31%) cases were due to medical disorders complicating

pregnancy, 5 (19%) due to PIH, and 4 (16%) due to PPH. Haemorrhage and hypertension still remain the major causes of maternal mortality even in a tertiary care institute.

Limitations

The present study has certain limitations. The study period was relatively short, which may limit the ability to evaluate long-term outcomes and trends. Additionally, the sample size was restricted to patients presenting during the study duration, which may affect the generalizability of the findings. Further studies with a larger sample size and longer follow-up are recommended to validate these observations.

CONCLUSION

In conclusion, an effective referral system remains a cornerstone of maternal health care, particularly in resource-limited settings. Timely recognition of high-risk conditions, informed decision-making by women and their families, and prompt access to appropriately equipped health facilities are critical determinants of maternal outcomes. Strengthening the capacity of peripheral health institutions through training in essential and emergency obstetric care can reduce unnecessary referrals and alleviate the burden on tertiary care centres, thereby contributing to a decline in maternal morbidity and mortality. Ensuring the availability of reliable transport services and functional blood bank facilities is equally vital for improving emergency obstetric care.

Furthermore, preventive strategies such as early antenatal registration, correction of anaemia, iron supplementation, deworming, and counselling on contraception and birth spacing play a crucial role in optimizing maternal health. Community-based interventions aimed at improving female education, health awareness, and social empowerment, particularly in rural areas, are essential for sustaining long-term improvements. Every woman has the right to quality maternal health care, and strengthening referral mechanisms along with updating maternal and child health services is imperative to achieve better maternal outcomes.

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