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Original Research Article

Study Of Maternal And Perinatal Outcomes Among Referred Obstetric Cases To A Tertiary Care Centre

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Abstract

Background: India accounts for a fifth of annual global maternal deaths. The referral system is an essential component of any health systems which is particularly important in pregnancy and childbirth for providing access to essential obstetric care. 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. Hence the present study was aimed to study the maternal and perinatal outcomes among referred obstetric cases.

Methods: A cross sectional study was carried out in department of Obstetrics and Gynaecology at tertiary care centre during the study period from Jan 2019 to Jan 2020. Study was conducted on all referred obstetric cases to the hospital. Thus such 1067 cases were studied. Detailed history of the patients who had been referred from different centres was taken, taking note of the referring centre and reason for referral. All collected data were filled in a predefined proforma. All data was collected and compiled in Microsoft excel. Appropriate test was applied for analysis under SPSS software version 21 and P value <0.05 was taken as significant.

Results: Total cases taken were 1067 were grouped into categories according to referring centre such that 432(40.49%) cases was referred from rural hospital/PHC/sub centre. Main perinatal outcome was live births 907(85.01%), IUD 60 (5.62%), neonatal death 88 (8.25%), abortion 6(0.56%), ectopic 3(0.28%), still birth 3(0.28%) and total maternal mortality were 12 (1.12%) and total neonatal death were 88 (9.70%).

Conclusion: Hypertensive disorders of pregnancy have been one of the commonest causes of referral among high risk obstetric patients which can be better dealt at the tertiary care centre. Health care workers should be provided with the checklist; also administration of a

dose of magnesium sulphate must be done in all cases of eclampsia and severe pre-eclampsia prior to referral.

Keywords: Maternal, perinatal, referred case, obstetrics

Introduction

India accounts for a fifth of annual global maternal deaths. Maternal mortality ratio was 113/100,000 live birth in 2018. Moreover for every maternal death 10 to 15 women suffer from disability. The referral system is an essential component of any health systems which is particularly important in pregnancy and childbirth for providing access to essential obstetric care. The Prevention of Maternal Mortality (PMM) network study has proposed a three delays model for referrals in obstetric emergencies. According to Thaddeus' and Maine's "3 delays model", there are three main delays affecting the timely delivery of care to a pregnant women in a facility when complications occur: (I) delays in seeking care, (II) delays in identifying and reaching the appropriate facility, and (III) delays in receiving quality care once the woman reaches the facility [1]. The Sub centre (SC) is the most peripheral unit in the existing government health care system in rural India and is the first level of contact where antenatal care is provided. First referral units (FRUs) are upgraded CHCs, Sub-district hospitals, District hospitals and specialist hospitals able to provide CEmOC care [2]. Women in developing countries often face serious health risks during pregnancy and delivery due to poor access to early and appropriate referrals [3]. It is still recommended to electively refer pregnant woman with high risk pregnancy, for delivery before any complication arise to a health care centre where all the facilities to deal with the complications are available [4]. With this background, the present study was aimed to study the maternal and perinatal outcomes among referred obstetric cases.

Material and Methods

A cross sectional study was carried out in department of Obstetrics and Gynaecology at tertiary care centre in Maharashtra, India during the study period from Jan 2019 to Jan 2020. Study was conducted on all referred obstetric cases to the hospital. Thus such 1067 cases were enrolled for the study.

Inclusion criteria

1. All Obstetric cases referred to the Obstetrics and gynaecology department at Tertiary Care Centre.
2. Obstetric cases directly admitted to ICU.

Methodology

Detailed history of the patients who had been referred from different centres was taken, taking note of the referring centre and reason for referral. All collected data were filled in a

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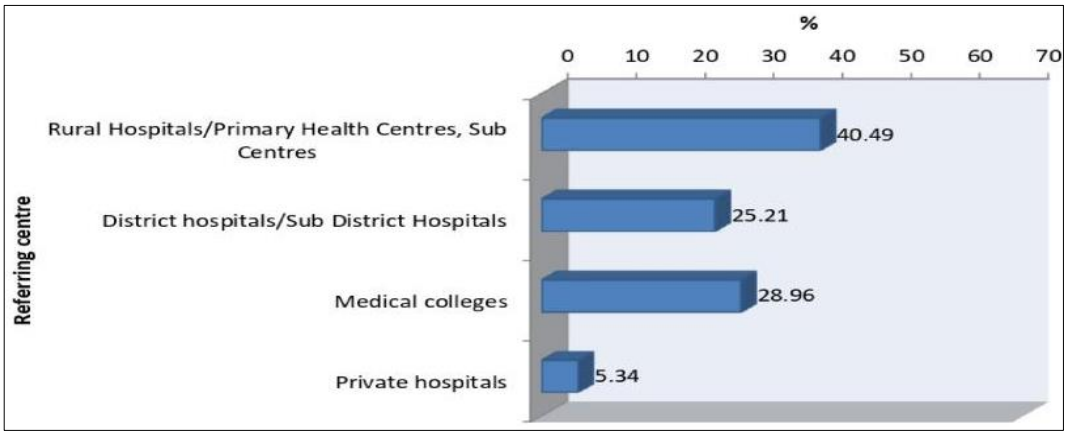
predefined proforma. Complete physical and Obstetric examination Basic investigations as well as case specific investigations were carried out as mandated by the clinical condition of the patient. Management of the patient and maternal and perinatal outcome were noted. Patient were followed up until discharge and condition of mother on discharge, any maternal morbidity or catastrophe were noted. Thus all data was collected and compiled in Microsoft excel. Appropriate test was applied for analysis under SPSS software version 21 and P value <0.05 was taken as significant.

Results

The present study was a cross-sectional observational study among 1067 ANC mothers those were referred to the higher centres.

Table 1: Distribution of subjects according to type of referring centre

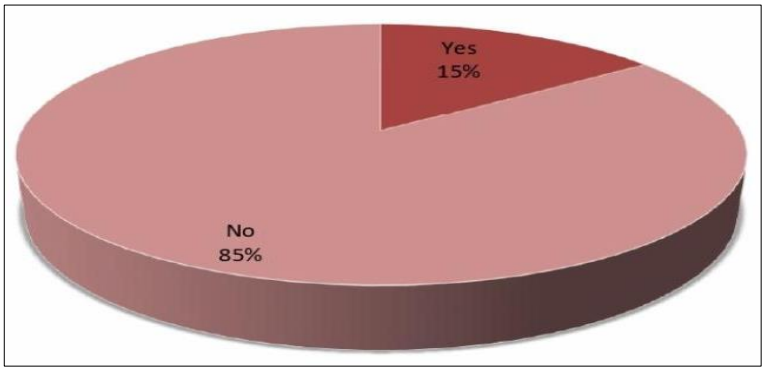
Type of referring centre	No.	Percentage
Rural Hospital/Primary Health Centres, Sub Centres	432	40.49
District hospital/Sub District Hospitals	269	25.21
Medical collage	309	28.96
Private hospitals	57	5.34
Total	1067	100.00



As Table 1 shows that 432(40.49%) cases was referred from rural hospital/PHC/sub centre, 269(25.21%) cases from District and Sub District hospital, 309(28.96%) cases from medical college, 57(5.34%) cases were from private hospital respectively.

Table 2: Proportion of subjects with medical illness (n=1067)

Illness	No.	Percentage
Yes	161	15.09
No	906	84.94
Total	1067	100



It was seen from Table 2 that Where, of total cases taken, 161(15.09%) case were referred for medical illness.

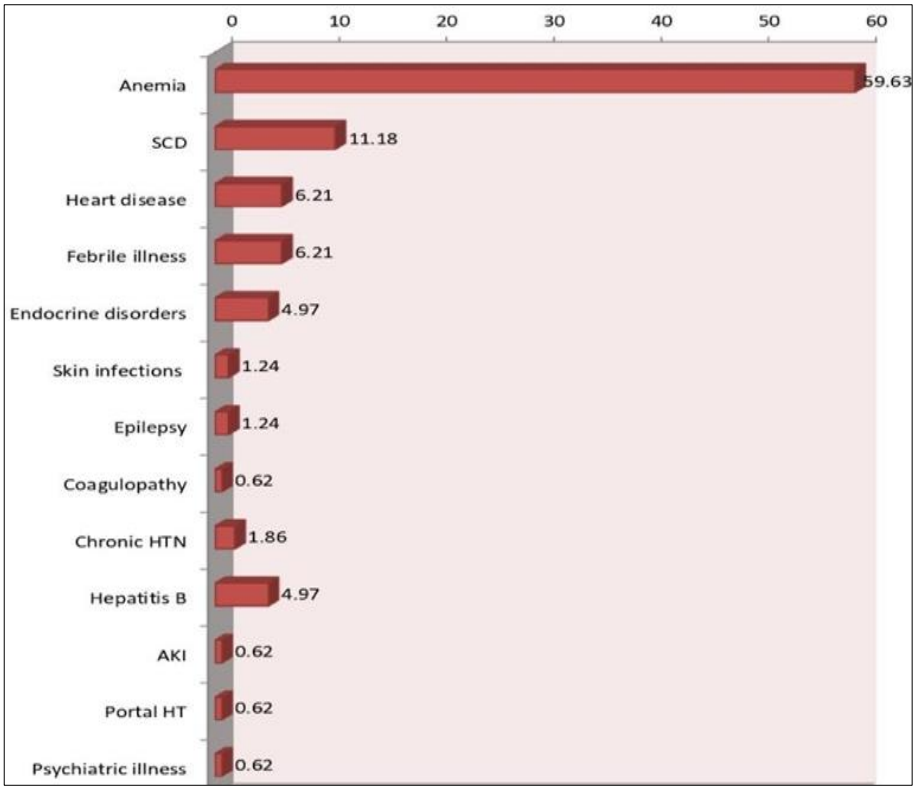


Fig 1: Distribution of medical illness among referrals (n=161)

As Figure 1 shows that among total cases were taken 161 (15.09%) case were referred for medical illness distribution of cases according to medical illness as reasons for referrals among total cases of 161 were Anemia 96 (59.63%), Sickle cell disease 18 (11.18%), Heart disease 10(6.21%), Endocrine disorder 8(4.97%), Febrile illness 10(6.21%), skin infections 2 (1.24%), Epilepsy 2 (1.24%), coagulopathy 1 (0.62%), Chronic hypertension 3 (1.86%), Hepatitis B 8(4.97%), AKI 3 (0.62%), Portal Hypertension 1 (0.62%) and Psychiatric illness 1 (0.62%) respectively.

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Table 3: Distribution of subjects according to maternal mortality

Maternal Mortality	No.	Percentage
Yes	12	1.12
No	1055	98.88
Total	1067	100

As Table 3 shows that out of total 1067 subjects, maternal mortality was 12(1.12%) only.

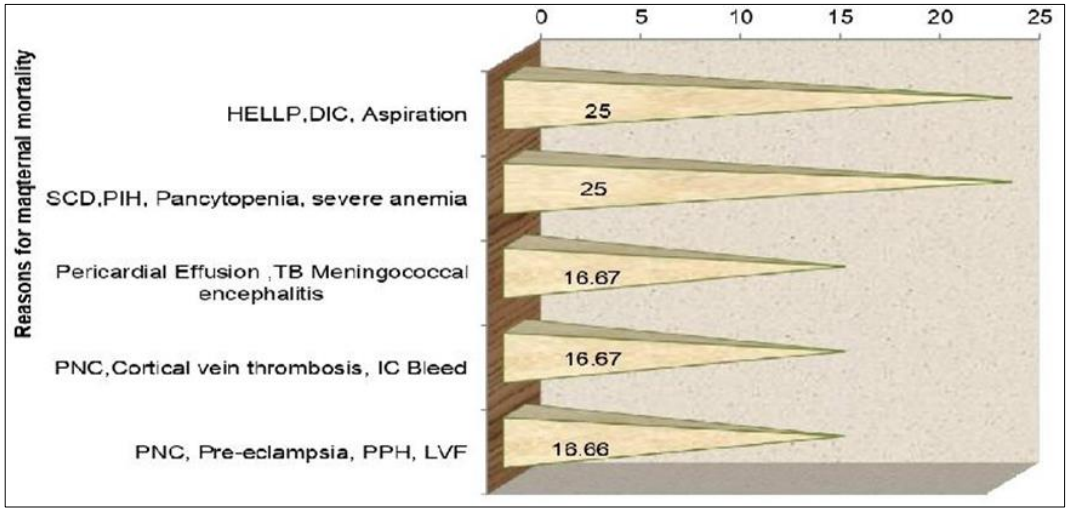

Fig 2: Distribution of subjects according to reasons for maternal mortality

As Figure 2 shows that the reasons for maternal mortality and most common reason was HELLP, DIC and aspiration.

Table 4: Distribution of subjects according to perinatal outcome

Perinatal outcome	Frequency	Percentage
Live birth	907	85.01
IUD	60	5.6
Neonatal death	88	8.2
Abortion	06	0.5
Ectopic	03	0.2
Still birth	03	0.2
Total	1067	100

As Table 4 shows perinatal outcome where, majority of cases were live births 907(85.01%), IUD 60 (5.62%), neonatal death 88 (8.25%), abortion 6 (0.56%), ectopic 3 (0.28%), still birth 3(0.28%).

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Table 5: Distribution of subjects according to neonatal death

Neonatal death	Frequency	Percentage
Yes	88	9.7
No	819	90.3
Total	907	100

It was seen from Table 5 that among total 907 live births, total neonatal death were 88 (9.70%).

Discussion

The referral system is an essential component of any health systems which is particularly important in pregnancy and childbirth for providing access to essential obstetric care. The present study showed that 432 (40.49%) cases was referred from rural hospital/PHC/sub centre, 269 (25.21%) cases from District and Sub District hospital, 309 (28.96%) cases from medical college, 57(5.34%) cases were from private hospital respectively and this finding is in agreement with findings of a study undertaken by Wahane AR *et al*.[5] where (95.65%) women belonged to rural areas & only (4.34%) were from urban areas. It is also in correlation with study done by Nanda LS *et al*. where majority of patients (64.69%) are from rural background [6].

Our study shows that among total cases were taken 161 (15.09%) case were referred for medical illness distribution of cases according to medical illness as reasons for referrals among total cases of 161 were Anemia 96 (59.63%), Sickle cell disease 18 (11.18%), Heart disease 10(6.21%), Endocrine disorder 8 (4.97%), Febrile illness 10 (6.21%), skin infections 2 (1.24%), Epilepsy 2 (1.24%), coagulopathy 1 (0.62%), Chronic hypertension 3(1.86%), Hepatitis B 8(4.97%), AKI 3(0.62%), Portal Hypertension 1(0.62%) and Psychiatric illness 1(0.62%) respectively. Pre-eclampsia/Eclampsia was the only similar major reason for referral in the study by Sabale U *et al*. was (25.8%) [7] and Rathi Charu *et al*. was (26%) [8] respectively.

In our study, 12(1.12%) maternal deaths were reported however slightly higher maternal deaths (1.55%) were reported by Sharma S *et al*. [9] and slightly lower maternal deaths (0.99%) and (0.80%) were reported by Nanda LS *et al*. [6] and Sabale U *et al*. [7]. Our study shows that the reasons for maternal mortality and most common reason was HELLP, DIC and aspiration similar results were reported by Nanda LS *et al*. [6] and Sabale U *et al*. [7].

The present study shows that the perinatal outcome where, majority of cases were live births 907(85.01%), IUD 60(5.62%), neonatal death 88(8.25%), abortion 6(0.56%), ectopic 3(0.28%), still birth 3(0.28%). Among total 907 live births total neonatal death were 88(9.70%). This finding was slightly higher than the findings of study done at Karachi by Khatoon A *et al*. [10] where (26.5%) neonates were shifted to NICU and 88% live births were noted. In our study, many cases were referred for lack of well-equipped operation theatres, blood banks and competent gynaecologists and anaesthesiologists. Government should take adequate measures to improve health care infrastructure, make provisions for

developing new blood banks and appoint trained gynaecologists and anaesthesiologists in the peripheries to reduce the burden on tertiary care centres.

Conclusion

Training of medical officers of primary health centres in the management of common obstetric emergencies, availability of specialist at rural health centres and up gradation of facilities at tertiary care centre will reduce the maternal morbidity and mortality. Hypertensive disorders of pregnancy have been one of the commonest causes of referral among high risk obstetric patients which can be better dealt at the tertiary care centre. Health care workers should be provided with the checklist; also administration of a dose of magnesium sulphate must be done in all cases of eclampsia and severe pre-eclampsia prior to referral. This study also recommends the development of a standard referral protocol, proper training in this regard and universal adherence to this in practice.

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