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Original Research Article

Study of feto-maternal outcome in referred obstetric cases in tertiary care center in Rajasthan: a cross sectional study

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ABSTRACT

Background: Pregnant women are at high risk for life threatening complications throughout the pregnancy and during delivery as well. Most of these complications are unpredictable with routine clinical examination. Skilled medical interventions such as blood transfusion, caesarean delivery, expert surgical team, medicines etc. are required to prevent these complications. Emergency obstetric referral should be carried out to avoid maternal and fetal morbidity and mortality. Aims and objectives of current study were to investigate the pattern of referral in tertiary care center and fetomaternal outcome in referred cases.

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

Results: Majority of them 43% women were of 21-25 year of age, 35% women were of 26-30 year of age group. Out of 76 delivered women, 55% underwent caesarean section and 36.84% were delivered normally. PPH seen in 6.66% patients, maternal deaths reported 2.5%, septicaemia 1.6%, wound gaping in 3.33%, puerperal pyrexia in 5% of patients. 77% neonates were shifted to mother-side, whereas 18% were admitted to NICU.

Conclusions: Referral system is an important part of health care system. By providing good antenatal care, availability of blood products, well organized referral center, timely identification and referral of high-risk patients, skilled birth attendants at time of child birth all will help in reducing feto-maternal morbidity and mortality and will help in achieving goal of ideal MMR and NMR.

Keywords: MMR, NMR, Referral emergencies, PPH, Feto-maternal outcome

INTRODUCTION

Pregnant women are at high risk for life threatening complications throughout the pregnancy and during delivery as well. Most of these complications are unpredictable with routine clinical examination. Skilled medical interventions such as blood transfusion, caesarean delivery, expert surgical team, medicines etc. are required to prevent these complications.¹ Obstetric complications (defined as acute condition, such as eclampsia, sepsis, obstructed labour) are life threatening

and cannot be predicted. Majority of these conditions can be managed with timely intervention with a package of evidence-based care known as emergency obstetric care (Emoc).^{2,3} 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 healthy baby.⁴ 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 objectives

Aim and objectives of the current investigation were to study the pattern of referral in tertiary care center and to study the fetomaternal outcome in referred cases.

METHODS

This was a cross-sectional observational study. It was conducted from May, 2021 to August, 2021 in the Department of Obstetrics and Gynaecology, Government Medical College, Kota a tertiary care hospital. It receives referred patients from nearby PHCs, CHCs, SDHs and private hospitals. All referred antenatal and intra-natal patients to our center of more than 24 weeks gestational age were included in this study. Gynaecological referrals and postpartum referrals were not included in our study. We selected 120 patients randomly. Randomization was done at the registration counter. We took every fifth patient from registration book. If the selected patient was not found on bed, we took next immediate patient. It was systematic random sampling.

All data regarding patient’s status, indication for referral, sociodemographic details, any medical comorbidities, gestational age, mode of delivery, neonatal outcome, birth weight, stay in NICU, maternal outcome were noted with pre-tested, interviewer administered study tool. Feto-maternal prognosis explained to relatives and patient. Data were entered in computer-based spreadsheet. Categorical variables such as age-category, maternal outcome, neonatal outcome, are presented as proportion and were analysed using statistical software SPSS v20.

RESULTS

In current study 13% patients were of <20 year, 43% women were of 21-25 year of age, 35% women were of 26-30 year of age group, 9% women were of >30 years of age group. In current study 47% patients were primi, 53% of patients were multiparous. Anaemia (20%) followed by previous caesarean section (16%) were the major cause of referral to our hospital. About 14% cases were referred in view of hypertensive disorder of pregnancy, 7% referred for preterm labour, 4% for PROM. Out of 120 patients, 35% of patients were referred from district hospital, 31% of patients were referred from CHC, 16% of patients were from private hospitals, 10% patients were from PHC, 6% from other medical colleges. About 55% of patients were referred from 50-150 km distance from our hospital, 29% from within 50 km distance and 15% of patients were referred from >150 km of distance from our hospital. About 59% of patients had referral -arrival interval up to 2 hr. 32% had referral to arrival interval 2-4 hours. Out of 76 delivered women, 55% underwent caesarean section and 36.84% were delivered by vaginal route. PPH were seen 6.66% of patients, maternal deaths were reported in 2.5%, septicemia in 1.6%, wound gaping in 3.33%, puerperal pyrexia in 5% of patients. Out

of 120 patients, 76 women were delivered. In our study 77% neonates were shifted to mother-side, whereas 18% were admitted to NICU. Out of 120 patients, 76 women were delivered and 44 women were treated conservatively.

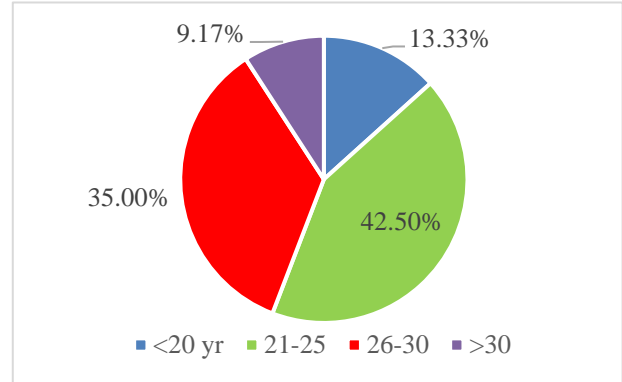


Figure 1: Age-wise distribution of patients (n=120).

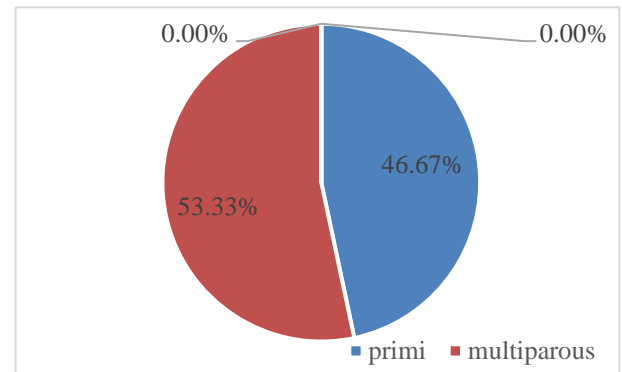


Figure 2: Distribution of patients according to parity (n=120).

Table 1: Causes of referral.

Causes	N	%
Antepartum haemorrhage	8	5.16
Previous CS	26	16.77
Obstructed labour	4	2.58
Hypertensive disorder in pregnancy	22	14.19
Anaemia	31	20
Preterm labour	12	7.74
PROM	7	4.51
Post-dated	6	3.87
Non availability of blood	8	5.16
MSAF	4	2.58
Cardiac disease	1	0.64
Malpresentation	9	5.80
Oligohydramnios	6	3.87
CPD	4	2.58

DISCUSSION

The world health organization estimates that at least 88-98% of maternal deaths can be averted with timely access

to existing referrals systems. timeliness and appropriateness of referral are a challenge to obstetricians since the delay in referral affects the maternal and fetal outcome adversely.⁵

Table 2: Location of refer.

Location of refer	N	%
PHC	13	10.83
CHC	37	30.83
DH	42	35
Medical college	8	6.66
Private hospital	20	16.66

Table 3: Distribution of cases according to distance from referral center.

Variables	N	%
Distance (km)	<50	29.16
	50-150	55.83
	>150	15
Referral to arrival interval (hours)	Up to 2	59.16
	2 to 4	32.5
	4 to 6	5
	>6	3.33

Table 4: Mode of delivery.

Mode	N	%
Vaginal delivery	28	36.84
LSCS	42	55.26
VBAC	4	5.26
hysterectomy	2	2.63

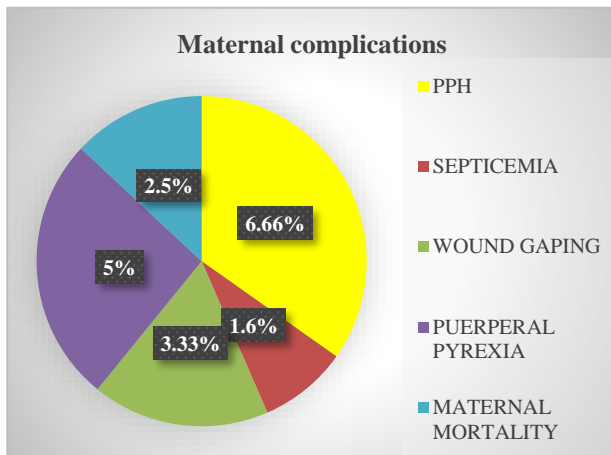


Figure 3: Maternal outcome.

In current study 13% were of <20 year, 43% women were of 21-25 year of age, 35% women were of 26-30 year of age group, 9% women were of >30 years of age group. while in study by Sirisha et al⁶ maximum no. of patients (76%) were of 20-30 year of age group. In current study 47% patients were primi, 53% of patients multiparous. Whereas, Gupta et al found 52.17% were primigravida.^{6,7} In our study anaemia (20%) followed by previous

caesarean section (16%) were the major cause of referral to our hospital, 14% cases were referred in view of hypertensive disorder of pregnancy. In study by Prakriti et al⁸ found that Anaemia (27.86%), Hypertensive disorder of pregnancy (17%) and 6% referred due to previous caesarean section. Study by Patel et al found that cause of referral was preeclampsia (16%).^{8,9}

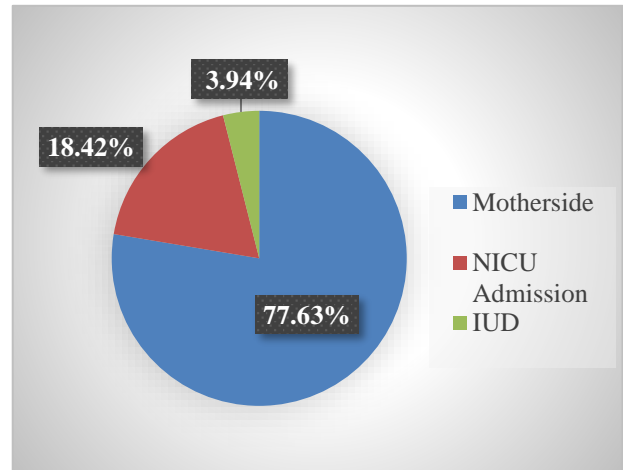


Figure 4: Neonatal outcome (n=76).

About 55% of patients were referred from 50-150 km distance from our hospital, 29% from within 50 km distance and 15% of patients were referred from >150 km of distance from our hospital. Sakhare et al observed that 65% cases travelled more than 50 km distance.¹⁰ In study by Prakriti et al 12% cases travelled more than 150 km distance, 23.4% cases travelled from 50-150 km distance.⁸ In current study 55% women were underwent caesarean section and 36.84% were delivered by vaginal route. While in study by Goswami et al 154 cases referred to tertiary care hospital, 67 patients needed surgical intervention. In study by Sorbye et al found that 55% needed caesarean section.^{11,12} In our study 77.63% neonates were shifted to mother side, whereas 18.42% were admitted to NICU and 4% were IUD. In study by Latika et al 15.74% of neonates were admitted to NICU.¹³

CONCLUSION

Referral system is an important part of health care system. Identification of high-risk patients and timely referral and management can reduce fetomaternal mortality and morbidity. By providing good antenatal care, availability of blood products, well organized referral center, timely identification and referral of high-risk patients, skilled birth attendants at time of child birth all will help in reducing fetomaternal morbidity and mortality and will help in achieving goal of ideal MMR and NMR.

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Conflict of interest: None declared

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

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