



Overview of Referred Obstetric Patients and Their Outcome in Tertiary Care Hospital

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Abstract

Background: *The key factors contributing the adverse maternal outcomes are lack of trained birth attendants, lack of education, low status of women in society, poor families, financial dependency of women, and delay in seeking medical treatment.*

Methodology: *The present study was carried out from January 2015 to April 2017 at tertiary care centre. Total numbers of obstetric admissions were 29387 out of which 5215 cases were referred. Data from total number of 5215 referred obstetrics cases was collected retrospectively and analyzed.*

Results: *The proportion of referral cases to our tertiary care institute from periphery was 17.74%. Maximum number of patients were in the age group from 20-30 years (4550 i.e. 87%). Maximum number of patients were unbooked comprising 73.3%. Maximum number of patients (3207) consisting 57.6% were from within Gwalior District. Rest of the cases were from outside Gwalior District. Maximum number of patients referred for anaemia (40.9%) followed by hypertensive disorders (26.6%) and hemorrhage (21.4%). Number of patients delivered vaginally (2506 patients) comprising 48.1% of total cases. 910 cases (17.4%) admitted to obstetric ICU. Maternal deaths were in 114 cases (2.2%) out of total referred cases.*

Conclusion: *Hypertensive disorders (preeclampsia, eclampsia), anemia and hemorrhage (antepartum or postpartum) have been the commonest cause of referral which need to be given special attention. The health care workers at primary centres should be trained properly.*

Keywords: *Hemorrhage, Hypertensive disorders, Maternal outcome.*

INTRODUCTION

Pregnancy and child birth are physiological processes and a woman is the only person who can come across a number of health related problems when pregnant and it can also lead to death. All these deaths occur in the developing countries where integrated health care system are not well organized ^{[1],[2]}.

22% of the population are constituted by women of child bearing age of 15-45 years in India. They are a vulnerable risk group which is due to pregnancy and child bearing. For providing access to essential obstetric care, the referral system is an essential component of any health systems which are important in pregnancy and child birth ^[3].

Over the centuries, anemia, eclampsia and hemorrhagic shock have killed millions of our pregnant women and still continue to do so. In spite of great advances in the medical field and improved quality of healthcare available in our country, the maternal mortality in India is very high ^[4].

The key factors contributing the adverse maternal outcomes are lack of trained birth attendants, lack of education, low status of women in society, poor families, financial dependency of women, and delay in seeking medical treatment ^[5].

Due to lack of awareness and absence of regular antenatal care, the critically ill patients are referred late and sometimes in moribund conditions 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 are an essential element of primary health care. A referral system offers women some degree of health care at every level of health care system while linking the different levels through an established communication transport system ^[6].

Primary care services are incomplete if they lack appropriate and efficient referral systems to secondary and tertiary care hospitals. Primary Health Centers form the back bone of the public health system in rural India ^[7].

For providing access to essential obstetric care, the referral system is an essential component of any health systems which are important in pregnancy and child birth ^[3].

It is still recommended to electively refer pregnant woman with previous caesarean section, breech presentation, transverse lie, multiple gestation, hypertension and severe anaemia for delivery before any complication arise to a health care centre where all the facilities to deal with the complications are available ^[6].

With this background present study was undertaken to examine the current nature of referrals, to evaluate the maternal outcome in referred patients and analysis of appropriateness and timeliness of referrals.

METHODOLOGY

The present study was a retrospective study conducted in the Department of Obstetrics and Gynaecology, Kamla Raja Hospital, G.R.M.C., Gwalior (M.P.). Study population was 5215 obstetric cases referred from various centers from January 2015 to April 2017.

Referred patients was from several District outside Gwalior as well as from within Gwalior District.

Demographic data of the patients and reasons for referral from referral slip was noted. Booking status of patients was noted whether they have taken previous antenatal checkups or not.

Maternal outcome was noted in terms of obstetric ICU admission, mode of delivery, mortality and cause of mortality. All data was collected, compiled and compared statistically by frequency distribution and percentage proportion. Chi-square (χ^2) test was applied to know the statistically significant difference (p value) of the data. Epicalc version 2000 software was used for the same. The data was also compared with similar studies in India and abroad.

RESULTS

After thorough analysis of data following observations were drawn:

Total numbers of obstetric admissions were 29387 out of which 5215 case were referred. The proportion of referral cases to our tertiary care institute from periphery was 17.74%. p -value is : 0.000001 which is statistically significant. (Table 1).

Table 1 : Referred patients out of total admissions

Total patients	Referred patients	Percentage
29387	5215	17.74

Maximum number of patients were in the age group from 20-30 years (4550 i.e. 87%) of total referred 5215 cases. p -value: 0.000001, statistically significant . (Figure 1).

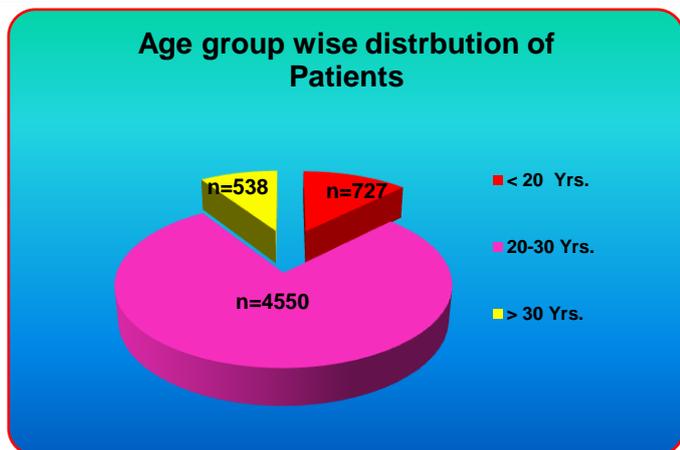


Figure No. 1 Age wise distribution of referred patients

Cases were distributed according to parity: Primi-gravida patients were 40.7%, multi-gravida patients were 50% and Grand-multi gravida were 9.3% which were statistically significant p-value= 0.000001 (Table 2).

Table 2: Parity wise distribution of referred patients

Parity	No. of patients	Percentage
Primi gravida	2124	40.7
Multi gravida	2604	50
Garndmulti gravida	487	9.3

In the present study, maximum numbers of patients were unbooked comprising 73.3% of total cases. They had not received any antenatal checkup. p -value: 0.000003, statistically significant (Table 3).

Table 3 : Booking status of referred patients

	No. of patients	Percentage
Booked	1392	26.7
Unbooked	3823	73.3

In the present study, referred patients were classified as per source of referral. Maximum number of patients (3007) consisting 57.6% were from within Gwalior District. Rest of the cases were from outside Gwalior District i.e. Shivpuri, Morena, Sheopur, Bhind, Guna, Datia, Ashok Nagar and others. p -value : 0.000002, statistically significant (Figure 2).

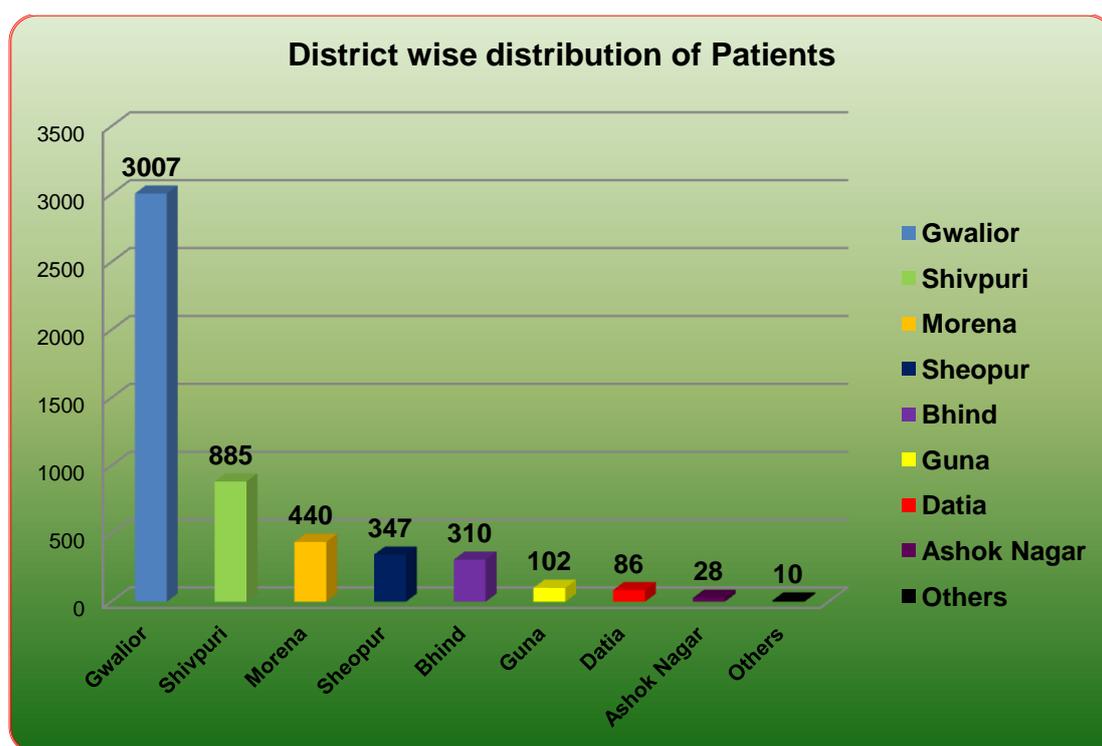


Figure No 2 Source of referred patients

In present study, cause of referral were classified into direct obstetric causes such as hypertension, hemorrhage, obstructed labour, sepsis, previous LSCS pregnancy, pulmonary embolism and indirect obstetric causes such as anemia, malaria,

hepatitis, heart disease and rest were un-indicated reasons for referral. Maximum number of patients referred for anaemia (25.13%) followed by hypertensive disorders (16.45%) and hemorrhage (13.18%) (Table 4).

Table 4 : Distribution of patients according to causes of referral

p-value = 0.000004	Cause	No. of patients (p-value = 0.000001)	Percentage (p-value = 0.000001)
Direct (n=2777)	(a) Hypertensive disorders	857	16.45
	(b) Hemorrhagic causes	688	13.18
	(c) Pulmonary embolism	25	0.45
	(d) Sepsis	150	2.87
	(e) Obstructed labour	405	7.86
	(f) Previous section	492	9.47
	(g) Cephalopelvic disproportion	62	1.18
	(h) Fetal distress	98	1.87
Indirect cause (n=1695)	(a) Anemia	1314	25.13
	(b) Malaria	90	1.72
	(c) Hepatitis	177	3.39
	(d) Heart disease	114	2.17
Un-indicated causes (n=743)	(a) OT Not available	366	7.01
	(b) Blood not available	172	3.29
	(c) Obstetrician not available	203	3.92
	(d) ICU not available	2	0.04

In present study, majority of patients delivered vaginally (2506 patients) comprising 48.1% of total cases. 1457 cases (27.9%) underwent

cesarean section and rest for managed conservatively. p-value is 0.006569, statistically significant (Table 5).

Table 5 : Distribution of cases according to mode of delivery

Mode of delivery	No. of patients	Percentage
Vaginal	2506	48.1
Cesarean	1457	27.9
Conservative (Post LSCS, abortion, PPH, Preterm pregnancy)	1252	24.0

In present study, out of total 5215 referred cases, 910 cases (17.4%) admitted to obstetric ICU. In

our study, maternal deaths were in 114 cases (2.2%) out of total referred cases.

In our study, hemorrhagic causes (24.6%) and hypertensive disorder (22.8%) constitute majority of deaths among the direct causes and anemia was

leading cause of mortality comprising 24.6% of total maternal deaths among indirect causes. (Table. 6)

Table 6 : Distribution of cases according to cause of death

p-value :0.0087	Cause of death	No. of patients (p – value = 0.000001)	Percentage (p – value = 0.000001)
Direct (n=71)	(a) Hypertensive disorders	26	22.8
	(b) Hemorrhagic causes	28	24.6
	(c) Pulmonary embolism	7	6.1
	(d) Sepsis	10	8.8
Indirect cause (n=43)	(a) Anemia	28	24.6
	(b) Hepatitis	7	6.05
	(c) Heart disease	6	5.25
	(d) Acute kidney injury	2	1.8

DISCUSSION

In our retrospective study, 5215 obstetric cases from January 2015 to April 2017 were referred to Kamla Raja Hospital, Gwalior.

Maximum number of patients (87.25%) were in the age group of 20-30 years in our study. Morsheda Banu et al^[8] showed that overall age distribution in majority (74%) of the respondents were between 20-35 years in their study which is correlated with our study.

In our study, maximum number of patients (50%) were multi-gravida, but study done by Morsheda Banu et al^[8] showed that majority of patients (50%) were primi-gravida.

In our study, majority of patients referred for anemia (25.13%) followed by hypertensive disorders (16.45%) and hemorrhage (13.18%). In study done by Patel HC et. al.^[9] causes of referral were preeclampsia (16%) and MSL(5%). Rathi et al.^[2] noted that majority of the cases were referred for hypertensive disorders of pregnancy (26%), preterm labour (26%), and medical disorders complicating pregnancy (21%). Maskey S et al^[10] 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 disorder (17%).

In present study, out of total referred cases, 27.9% of cases underwent caesarean section and 48% delivered vaginally. Sorbye et al.^[11] found that referral status contributed substantially to the increased caesarean section rate, which was 55% in formally-referred which is not correlated with our study.

In present study, previous LSCS patients comprises 15.3% cases of total referral and in study by Khatoun A et al^[12] cause of reference for previous cesarean section is 15% which is correlated with our study.

In present study, 910 (17.4%) cases admitted to obstetric ICU. Divya Goswami et al^[13] studied 154 cases referred to tertiary health centre in 2014. They found that 19 patients (8.02%) needed ICU admission. Maskey S et al^[10] conducted a prospective observational study reviewed 112 obstetric cases referred from various centres. 27% of patients were in serious or critical condition on arrival, 52% patients required surgical intervention, 19% received intensive care management.

In present study, hemorrhagic causes (24.6%) and hypertensive disorder (22.8%) constitute majority of deaths among the direct causes and anemia was leading cause of mortality comprising 24.6% of total maternal deaths among indirect causes. In study done by Begum S et al^[14], among the direct

causes of maternal deaths leading causes were hypertensive disorders (35%) and obstetric hemorrhage (20%). Borchert M et al ^[15] found obstetric haemorrhage (32.2%) and infection (31.6%) as the leading cause of maternal death. Dilpreet et al ^[16] found in their study hemorrhage was the leading cause of maternal death.

In present study, maternal deaths occurred in 114 cases (2.2%). Maskey S et al ^[11] found in their study that maternal deaths occurred in 2 cases (1.8%) which is correlated with our study.

CONCLUSION

Wide spectrum of complicated obstetric cases referred to our tertiary care hospital. Hypertensive disorders (preeclampsia, Eclampsia), anemia and hemorrhage (ante-partum or post-partum) have been the commonest cause of referral which need to be given special attention. The health care workers at primary centers should be trained properly. Health education and awareness by mass media and non government organizations can improve the health and social status of women in our country.

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