ORIGINAL ARTICLE

Pattern of Obstetrical Emergencies and Fetal Outcomes in a Tertiary Care Center

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ABSTRACT

Introduction: There is increasing awareness and facilities provided by various government and non government organizations regarding antenatal care and safe delivery practices but it is still a public health concern due to high maternal and perinatal mortality. The aims of present study is to assess the availability of manpower which provided services to the mothers in the peripheries, role of demographic characteristics, educational status, common pregnancy complications and there maternal and fetal outcome along with the hospital stay. **Material and Methods:** It was a retrospective study carried out in the Teerthanker Mahaveer Medical College. All the patients who were admitted through casualty were analysed with respect to Age, parity, Socioeconomic status, antenatal check-up, reason for referral from periphery, maternal and fetal condition at the time of admission, mode of delivery, maternal and fetal outcome along with NICU admission & hospital stay. **Result:** It has been observed that most of the patients with poor obstetrical outcome are multiparous or grand multiparous with low socio economic status not receiving any antenatal care. The common obstetrical emergencies came out were PIH (18%), obstructed labor (10.3%) followed by APH (8.2%), fetal mal-presentation (7.5%) and anemia (7.2%). **Conclusion:** Illiteracy and ignorance of female regarding healthcare requirements came out to be a major contributor of poor pregnancy outcome. Early diagnosis and management of high risk pregnancies is one of the measures which can reduce poor pregnancy outcomes. It is to be emphasized that majority of the maternal death from pregnancy are preventable by sample priority intervention. Co-ordination between healthcare providers at gross root level to tertiary care centre is the need of time. Health care providers at PHC and CHC levels should have adequate knowledge of antenatal requirements and importance of immunization. There must be referral of high risk cases for their early and timely management. There must be adequate transport facility and systematic referral system as well as provision of immediate management of referred cases at tertiary care centre. So it is high time for urgent strategic planning and investment for upgrading effective obstetric and neonatal care.

Keywords: Antenatal care, Antepartum haemorrhage, Fetal malpresentation, Obstetric care

INTRODUCTION

Despite increasing awareness about antenatal care and safe delivery practices, there is a public health concern about high maternal mortality and perinatal mortality. The demographic factors and clinical characteristics of patient like maternal age, parity, antenatal care, and fetal presentation with associated medical & obstetrical complications play a very important role in the pregnancy outcome. Globally 61% of births are assisted by skilled birth attendants, while in some low income countries; the average is as low as 34%.[1] The current level of home deliveries in India is 59%.[2]

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Lack of utilization of health services, inappropriate transport facilities, health ignorance, poverty and traditional beliefs are the factors which further worsen the condition if patient needs immediate critical care for obstetric emergency.

The govt. of India has framed an interstate border district strategy for betterment of maternal and child health related indicators with an ultimate goal to reduce maternal, infant and child mortality rates. It is not only the political system which is responsible but literacy and awareness of the community and the mothers which affects the outcome.

This study was carried out with the following aims

- To assess the availability of manpower which provided services to the mothers in the peripheries of the districts regarding basic facilities and their knowledge (skilled/unskilled).
- Demographic characteristics of the patients like age, parity, socioeconomic status.

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- Educational status of the patients.
- Presenting features i.e., diagnosis
- Mode of delivery
- Maternal and fetal outcome along with the hospital stay.

Our hospital is a tertiary care centre which caters the health services along the borders of U.P and Uttarakhand. All the obstetrical patients presenting to the casualty in the reproductive age were analysed regarding parity, period of gestation, puerperal complication or post abortion sepsis, antenatal care received at the periphery, reason for referral and presentations. Patients were further evaluated for obstetrical and medical complication, mode of delivery whether normal, instrumental or caesarean section, maternal outcome in terms of complications, hospital stay, ICU admission, blood transfusion, maternal mortality & fetal outcome in terms of mortality, NICU admission and ventilatory care.

MATERIAL AND METHODS

It was a retrospective study carried out in the Teerthanker Mahaveer Medical College & Research Centre from 01/09/2011 to 31/08/2014. All the patients who were admitted through casualty were analysed with respect to

- Age, parity
- Socioeconomic status
- Antenatal checkups
- Reason for referral from periphery
- Maternal and fetal condition at the time of admission
- Mode of delivery
- Maternal and fetal outcome along with NICU admission & hospital stay.

RESULTS

During the study period there were a total of 2469 patients admitted through the casualty department.

As shown in Tables No. 1 & 2 regarding the demographic details of the patient maternal age range between 16-45 years, maximum was between 21 to 30 years of age. There were about 860 (34.83%) primipara, 1108 (44.88%) multipara and 501 (20.5%) were grand multipara (Figures 1 and 2).

As shown in Tables No. 3-5 most of the patients were from lower class (39.7%) which was followed by middle class (35.5%). Majority of them (79.9%) had received only primary education. Out of 2469 patients, 1530 (61.9%) had received the antenatal care while 939 (38.1%) had not received antenatal care (Figures 3-5).

Table No. 6 shows that out of 2469 patients, 15.3% patients had not received any care and most of the care

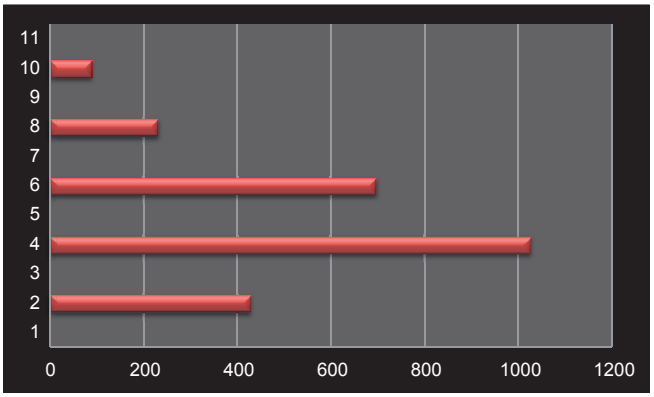

Figure 1: Distribution of cases according to age

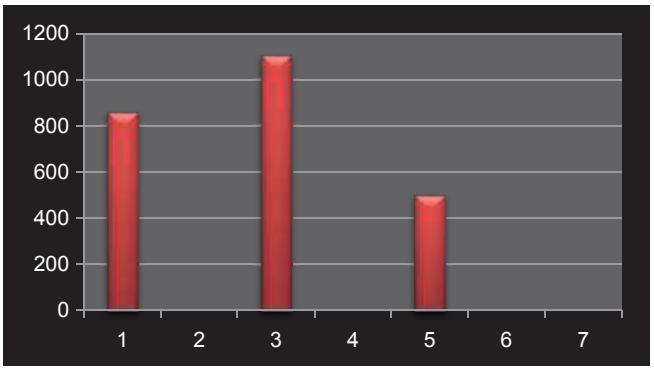

Figure 2: Distribution of cases according to parity

Table 1: Distribution of cases according to age

Age	No of patients	Percentage
16 to 20 years	428	17.33
21 to 25 years	1026	41.56
26 to 30 years	696	28.19
31 to 40 years	230	09.32
41 to 45 years	89	03.60

Table 2: Distribution of cases according to parity

Parity	No of patients	Percentage
Primipara	860	34.83
PARA 2 to 4	1108	44.88
PARA 5 or above	501	20.29

Table 3: Distribution of cases according to socioeconomic status

Category	No. of patients	%
% Upper class	622	25.19
Middle class	865	35.03
Lower class	982	39.78

Table 4: Distribution of cases according to educational status

Level of education	No. of patients	Percentage
Up to primary school	1975	79.9
Senior secondary school	200	8.1
Graduate or more	294	11.9

providers were either untrained birth attendants (34.6%) or aanganwadi workers (27.2%). These first referral care providers can only conduct the delivery at the patient's house. They give tetanus toxoid and Iron & folic acid tablets to the patients. About 22.7% of the patients went to general practitioners or the PHCs where facilities for normal delivery and uncomplicated caesarean section were present (Figure 6).

Table No. 7 details about the clinical presentation of the patients and the common causes came out were PIH (18%), obstructed labor (10.3%) followed by APH (8.2%), fetal malpresentation (7.5%) and anemia (7.2%) (Figure 7).

Table No. 8 summarizes the mode of delivery. Out of 2469 admissions, 1680 delivered during the study period. About 58.33% were delivered by caesarean section and 41.67% delivered vaginally out of which 21.07% were instrumental deliveries. Average of total duration of labour was 02-08 hrs. As shown in Table No. 9, average duration of hospital stay was 10 days in 56.2% of patients (Figures 8 and 9).

Table No. 10 shows the maternal outcome in terms of hospital stay & complications. 42.2% of the patients were transfused blood followed by septicemia in 12.2% & wound infection in 5.71%. Out of 2469 patients, 11.5% patients needed ICU admissions and 5.42% needed ventilator care. Out of 2469 patients, 3.80% patients expired. Amongst them the most common cause was hemorrhage and shock and out of 96 patients around 67 expired within 1 hour of admission and 29 patients succumbed due to septicaemia and DIC (Figure 10).

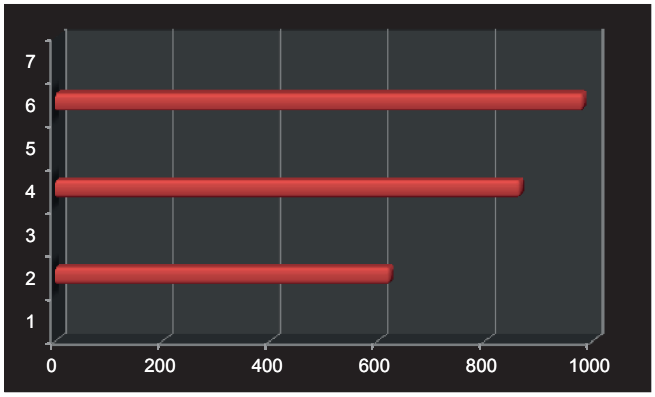

Figure 3: Distribution of cases according to socioeconomic status

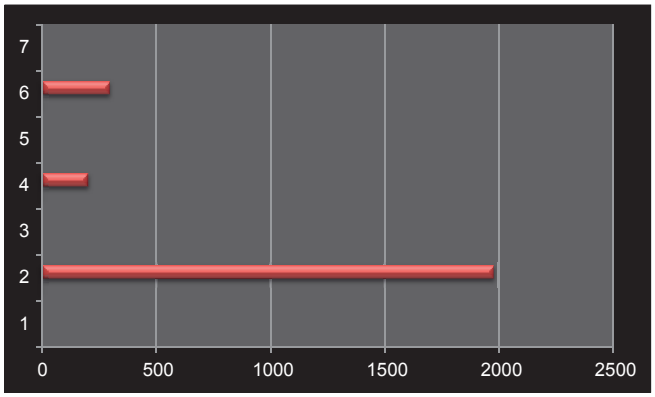

Figure 4: Distribution of cases according to educational status

Table 5: Distribution of cases according to antenatal care received & tetanus toxoid

Parameter	Present (no. of patients)	Percentage	Absent (no. of patients)	Percentage
Antenatal care	1530	61.90	939	38.10
Tetanus toxoid	1340	54.27	1129	45.73

Table 6: Distribution of cases according to first referral care providers

Type of care provider	Cases	%
Untrained birth attendants	561	34.7
Female health workers (anganwadi workers)	756	27.3
General practitioners	774	22.7
No care	378	15.3

Table 7: Distribution of cases according to clinical presentation

Clinical presentation	No. of patients	%
Preterm labor & PROM	256	10.3
PIH	468	18
APH	204	8.2
Severe anemia	178	7.2
Obstructed labor	256	10.3
PPH	133	5.3
Malpresentation	186	7.5
Medical disorders	122	4.9
Abortion	166	6.7
Ectopic	88	3.5
Multiple pregnancy	57	2.3
Puerperal sepsis	124	5.02
Rupture uterus	46	1.8
Foetal distress & IUD	109	4.4
Retained placenta	68	2.7
Inversion	8	0.32

Table 8: Distribution of cases according to mode of delivery

Mode of delivery	No. of patients	%
Spontaneous vaginal	346	20.59
Instrumental	354	21.07
LSCS	980	58.34

Table 9: Distribution of cases according to duration of hospital stay

No. of days	No. of patients	%
Less than 10 days	1388	56.2
10-12 days	773	31.3
15 days or more	308	12.4

Table No. 11 shows that out of 1680 deliveries 584 (34.7%) were still borns & 1096 (65.2%) were live births. Out of there live births 812 (74%) needed NICU admission and 209 (25.7%) went in to neonatal ventilator (Figure 11).

DISCUSSION

Although numerous programs are being carried out for learning and orientation towards dealing with emergency obstetrical care, these programs have not been very successful in roping a large majority of medical personnel. A deep insight and complete understanding of the physiological needs of both the mother and the fetus pose a big challenge during critical illness situations. The improved outcomes of developed nations have failed to cast a significant impact on the functioning of obstetrical services leading to poor statistical figures in the developing nations. In India, approximately 28 million women experience pregnancy and 26 million have live births.[3] An

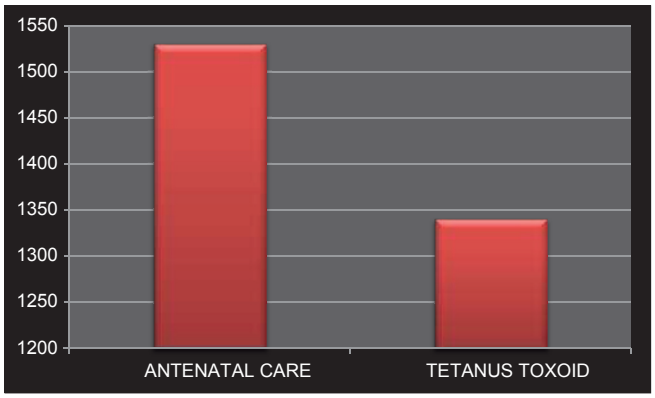

Figure 5: Distribution of cases according to antenatal care received and tetanus toxoid

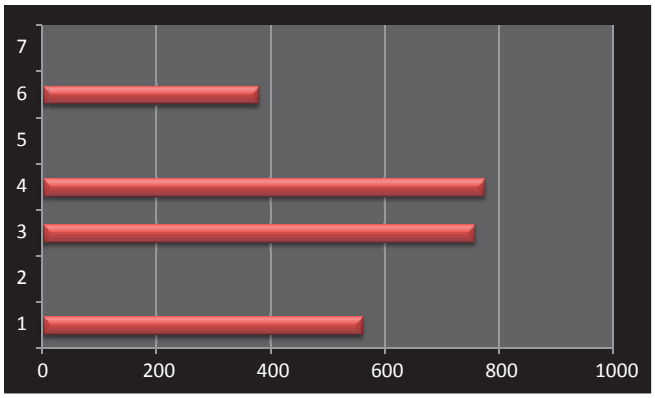

Figure 6: Distribution of cases according to first referral care providers

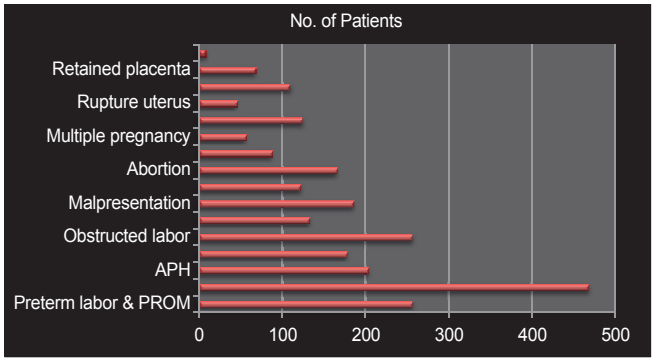

Figure 7: Distribution of cases according to clinical presentation

Table 10: Distribution of cases according to maternal outcome

Parameters	No. of patients	%
PPH with shock	209	8.4
Paralytic ileus	261	10.5
ICU admission	284	11.5
Septicemia	302	12.2
Blood transfusion	1042	42.2
Wound infection	141	5.71
Ventilatory care	134	5.42
Mortality	96	3.88

Table 11: Distribution of cases according to perinatal outcome

Livebirth	1096	65.3%
Deadborn	584	34.7%
NICU admissions	812	74%
Ventilatory care	209	25.7%

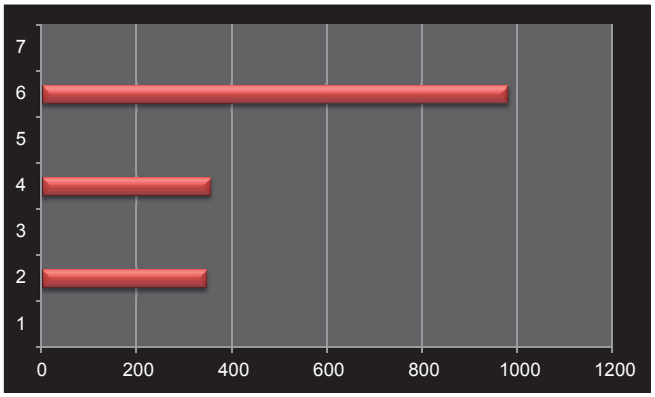

Figure 8: Distribution of cases according to mode of delivery

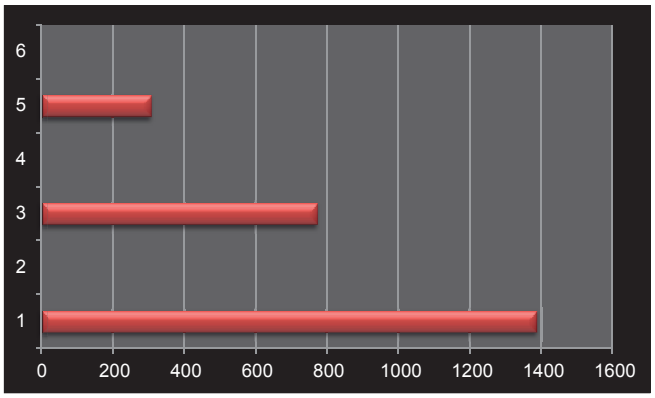

Figure 9: Distribution of cases according to duration of hospital stay

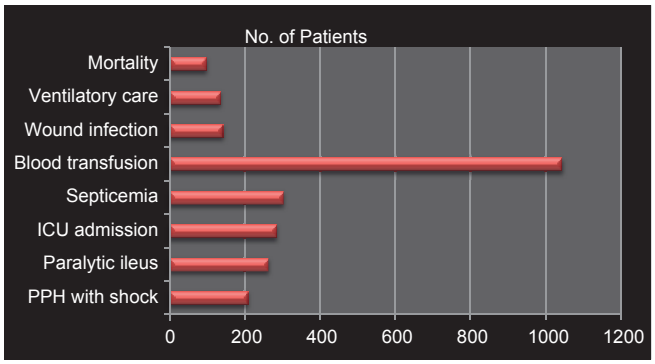

Figure 10: Distribution of cases according to maternal outcome

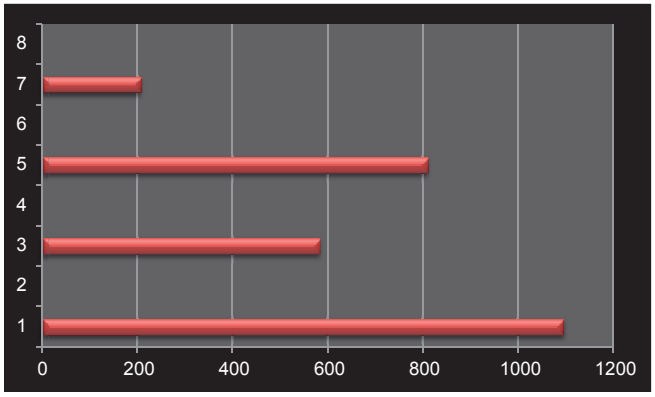

Figure 11: Distribution of cases according to perinatal outcome

estimated 67,000 maternal deaths and one million newborn deaths occur each year. In our study most of the patients were of 21 to 30 years of age and were multi gravida and usually belong to lower socio economic status (39.7%). In our study nulliparilty was not related to ICU admission, which was also noted by Pollock et al.[4] On reviewing the educational status most of the referred patients were having only primary education (79.9%) table III shows that out of 2469 patients, 377 patients have not received even a tetanus toxoid or any antenatal checkup and maximum number of the health care advices were taken by untrained birth attendants or dais in those who were having antenatal checkups or deliveries. In a multicentric study conducted by FOGSI, it was found that poor outcome was mainly due to delay of referral of obstetrical patients to tertiary care centers.[5] The most common cause of referral of the patient by Konar et al was hypertension (34%) hemorrhage (31%) and sepsis (18%) and was responsible for maternal mortality also, which is almost comparable to our study except that instead of sepsis we had obstructed labour as the 2nd commonest presentation, but the commonest cause of maternal mortality was also the same in our study that is hemorrhage. Bajwa et al reported hemorrhage and hypertensive disorders as main etiological factors.[6,7] In our study mortality rate was approximately 4% which was lesser in comparison to study conducted by Gupta S. et al and Bhat et al in which it was 13%.[8,9] A systematic review conducted by the WHO found that PPH is the leading cause of maternal mortality in Africa & Asia, accounting for up to half of the total number of deaths in these region. Overall PPH accounts for an estimated 25% of maternal mortality worldwide.[10,11] PPH was consistently the most common indications for ICU admission, which was also noted in Tang et al series.[12] As suggested by the National Institute for health & clinical excellence guideline.[13] our management protocol for preeclampsia & eclampsia was updated to incorporate the more liberal use of anti hypertensives & magsulphate. Intensive care is indicated in patients with severe hypertension with symptoms of impending eclampsia or any suggestion of organ disfunction. These innovations lead to rising trend of ICU admissions.[14] Out of 2469 patients, 96 patients died and among them 67 patients died within 1st hour of admission. In a study the major cause of maternal mortality has been found to be septicemia due to higher prevalence of septic abortion. In our study 11.2% patients require ICU admission and 5.42% needed ventilatory care. Although in developed countries like United States the incidence of ICU admission for obstetrical patients is only 0.2-0.9% due to literacy, awareness and better health care services but not so in the developing countries.[15] In a multicentric trial conducted by FOGSI in 2005-2007 majority of the referral institutions failed to provide critical care management that those referred patients needed. In our study 58.33% of the patients were delivered by caesarean section mainly due to obstructed labour and late referral. Similar results have been reported by Haider and Nishat in 2009.[16] Perinatal outcome was just satisfactory, 65.2% had live births and 34.76% were still borns. Adhikari and saughamita reported a perinatal mortality of 43.27%[17] in their study mainly due to obstructed labor.

CONCLUSION

As per our study, illiteracy and ignorance of female regarding healthcare requirements and facilities provided by government came out to be a major contributor of poor pregnancy outcome. Early diagnosis and management of high risk pregnancies by healthcare personnel is one of the measures which can reduce poor pregnancy outcomes. It is to be emphasized that majority of the maternal death from pregnancy are preventable by sample priority intervention. Co-ordination between healthcare providers at gross root level to tertiary care centres is the need of time. Health care providers at PHC and CHC levels should have adequate knowledge of antenatal requirements and importance of immunization. There must be referral of high risk cases for their early and timely management. There must be adequate transport facilitity and systematic referral system as well as provision of immediate management of referred cases at tertiary care centres. So it is high time for urgent strategic

planning and investment for upgrading effective obstetric and neonatal care.

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