Original Article

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Audit of Emergency Obstetrical Referrals from District Hospital of Aspiring District in Uttar Pradesh

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Abstract

Introduction: Maternal death in India is still high, alone accounting for a fifth of total global burden.[3] By providing effective emergency obstetrical care and referral system, maternal mortality and morbidity can be reduced.

Material and Method: This is retrospective descriptive study, conducted with analysis of routinely collected data for the period of 6 months, this study was conducted at district hospital, Bahraich which is 300 bedded tertiary level health facility.

Result: A total of 5443 women were admitted for delivery over a period of 6 months. Out of total admitted women 139 were referred to higher centre, the referral rate was 2.55%. Among the deliveries conducted at the DH, vaginal delivery account for 78.997% of total delivered patients, 21.003% women delivered by cesarean section. Anemia is the most common cause of referrals which is 21.58% of total referred women. Eclampsia/severe preeclampsia is 2nd most common cause of referral (16.55% of total referral). Large number of patients 38.13% were coming from a distance of more than 20 km but within 50 km. 14.39% of total referred women were travelling a distance of 50–100 km to come to the DH. 22.30% women were conscious but having unstable vitals at the time of admission. 12.23% (17 out of 139) women were unconscious with low GCS scale.

Conclusion: This study highlights the deficiency human resources, infrastructure and equipment at district hospital level hampering the provision of EmOC. If these issues are adequately addressed, it would greatly enhance health facility for providing EmOC.

Keywords: Referrals; EmOC; ANC Care.

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Introduction

According to Registrar General of India 2010–12, Maternal mortality ratio of India is 178/1 lakh live birth in 2012.[1] This alone accounts for about a fifth of global maternal mortality burden.[2] Every year about 287,000 women die worldwide due to causes associated with pregnancy and childbirth,[3] when a large number of death could be avoided by provision of medical access during antenatal, intapartum and postpartum period. Although there has been a decrease of 16% in maternal mortality ratio in last two decades but maternal deaths in India still remain high.[3,4] Quality of care provided during childbirth is a critical determinant of increasing utilization of services and preventing maternal mortality or morbidity.[5] Schemes such as Janani Suraksha Yojna initiated by government to increase nationwide institutional delivery, resulted into three fold rise in institutional delivery as reported in NFHS 2/3 but the desired reduction in maternal mortality data is not appreciated. To prevent maternal deaths, complications occurring at home or birth centers requires timely and appropriate referral to Basic emergency obstetrical care (BEmOC) or specialist comprehensive emergency obstetrical care (CEmOC) and referral from BEmOC to CEmOC as provision of emergency obstetrical care at different level of public health facilities varies.[6]

An effective referral system is important to facilitate efficient transfer of patients, proper communication to next level of care. Government has introduced a referral system by provision of free ambulance services to improve the quality of care by tertiary care centre and also reduction of burden to tertiary care centre. Patients to be referred is a medical decision which is affected by various factors like skill of health personnel, availability of specialist, counseling, distance, accompanying person, cost of care. Current gaps in the provision of essential obstetrical care can be delineated only by systemic monitoring of referrals at regular

intervals and proper feedback mechanism. It also helps in identifying training of the staff as well as logistic requirements for provision of effective obstetrical care. The present study was conducted with the objective to identify the reasons for referral of emergency obstetrical patients and correlate their general conditions and complications to poor access to health facility.

Objective

This study was conducted to identify reasons for emergency obstetrical referrals from district hospital Bahraich, aspiring district of Uttar Pradesh.

Material and Methods

This is a type of retrospective descriptive study, with analysis of routinely collected data for the period of March 2019 to August 2019. This study was conducted at district hospital, Bahraich which is 300 bedded tertiary level health facility.

Records of all antenatal and postnatal patients referred from district hospital Bahraich were collected in a referral register which is maintained in maternity ward. Patient's information such as patient's particular, time of admission, time of referral, indication for referral and prereferral treatment were recorded in the register. A referral slip was given to patient's attendant with all these details. From referral register information of patient details, clinical condition and reasons for referral were retrieved.

Results

Table 1: DH, Bahraich data of March–August 2019.

Total admission	5443	
Total delivered	5304	
Total referred	139	2.55%
Delivered vaginally	4190	78.997%
Delivered by c-section	1114	21.003%
Maternal death	26	510 per lakh live birth
Still birth	212	41.63 per thousand live birth

A total of 5443 women were admitted for delivery over a period of 6 months. Out of these 5304 delivered at district hospital, Bahraich either per vaginally or by cesarean section. Out of total admitted women 139 were referred to higher centre. So the referral rate was 2.55%. Among the deliveries conducted at the DH 4190 women were delivered vaginally account for 78.997% of total delivered patients at study centre. 1114 number of women delivered by cesarean section which was 21.003% of total delivered women. Total number of maternal death during this period is 26 and still birth is 212.

Table 2: Causes of Referrals.

Causes	Total Patients	Percentage
Severe anaemia	30	21.58%
Eclampsia/severe preeclampsia	23	16.55%
APH	19	13.67%
Previous LSCS	13	9.35%
Prematurity	10	7.19%
Others causes –		
Jaundice	3	2.16%
Fetal anomalies	3	2.16%
Uninvestigated ANC	3	2.16%
Sepsis	2	1.44%
Failed regional anaesthesia	2	1.44%
Obstructed labor	1	0.72%
IUGR	1	0.72%
HBsAg	1	0.72%
Suspected Heart disease	1	0.72%
Intoxication	1	0.72%
Renal failure	1	0.72%
Grans multi woman	1	0.72%
Rupture uterus	1	0.72%
Cause not mentioned	23	16.55%

Table 2 shows the women those who were referred from DH, Bahraich; severeanaemia was the most common cause of referrals which is 21.58%. 30 out of 139 were referred due to severe anaemia. 2nd most common reason for referral is eclampsia/ severe preeclampsia. 23 women (16.55%) were referred due to eclampsia/severe preeclampsia.

13.67% (19 out of 139 referrals) were because of antepartum hemorrhage. Previous LSCS in 9.35% (13 out of 139 referrals) of referred women was cause. Only 7.19% (10 women) were referred due to prematurity. Other causes of referrals are jaundice with pregnancy, fetal anomalies, uninvestigated pregnancy, IUGR, HBsAg, obstructed labor, heart disease, intoxication, renal failure, grand multi women, rupture women, sepsis, failed regional anesthesia. Most women were presented with multiple combinations of causes. Documents of large number of women, 16.55% (23 out of 139) were incomplete. Causes of referrals were not mentioned.

Table 3: Distance between Household from the District Hospital

Distance	Number of Women	Percentage
<10 km	33	23.74%
10–20 km	27	19.42%
20–50 km	53	38.13%
50–100 km	20	14.39%
>100 km	6	4.32%

Above tables highlight the distance of referred women's residence from the DH Bahraich. Large number of patients 38.13% (53 out of 139) were coming from a distance of more than 20 km but within 50 km. 20 or 14.39% of total referred women were travelling a distance of 50–100 km to come to the DH. 6 or 4.32% of women were even coming from more than 100 km distance. 23.74% (33 out of 139) women were within <10 km of district hospital. 19.42% (27 out of 139) women were coming from more than 10 km but within 20 km of surrounding.

Table 4: General Condition at the Time of Arrival.

General Condition	No. of Women	Percentage
Stable	91	65.47%
Conscious but unstable vitals	31	22.30%
Unconscious	17	12.23%

Above table shows, 2/3rd of referred patients (65.47%) were stable at the time of admissionin the DH. 22.30% (31 out of 139) women were conscious but having unstable vitals at the time of admission. 12.23% (17 out of 139) women were unconscious with low GCS scale.

Discussion

In this study we documented magnitude of referrals from DH, Bahraich, reasons for referrals and correlate patients general condition and complications to poor access to health facility.

The referral out rate at our study centre was 2.55% which is much higher for tertiary care centre. Study conducted by Chaturvedi et al.[7] In 96 health facilities of different tiers, it was reported that referral-out rate was 5.9%. Referral out rate for PHC was 14.3%, followed by CHCs (7.5%) and it as 0.8% at tertiary care centre. Data regarding referrals from district hospital are scarce. Almost all of referred out patients were in age group 21–30 years, probably due to early marriage maximum pregnancies fall in this age group. Study by Gupta et. al (2015) reported 86.98% referred cases in 21–30 year age group, comparable to our study.[8] Study by Pandya and Patel (2015) reported 64% of referred cases in this age group.[9] According to RCH guidelines, health staff should provide brief referral note and inform if possible to tertiary care centre. Mostly referred patients have incompletely filled referral slip with only verbal instruction to the family of patients. Maitra and Barua noted that patients usually presented without any record of high risk pregnancy, before any intervention.[10,11] Chaturvedi et al study showed that 72% in referral patients had referral slip but reason for referral and prior treatment given was not mentioned.[7]

Among deliveries conducted at DH, Bahraich 78.997% of total delivered patients were delivered vaginaly. 21.003% women were delivered by cesarean section which is much higher than WHO recommended range of C–section of 5–15%. According to study of Vivek Verma et. al which analyzes data from NFHS II (1998-99) and NFHS III (2005–06), cesarean deliveries in India among all birth is increased by 3% from 7.2% (1998–99) to 10.62% (2005–06),[12] it shows our study centre has almost double rate of cesarean sections than national standards. Large number patients are undergoing unnecessary C–section diagnosis. This increases the huge burden on the health system and enhances the risk of manifestation of major health problems on mother and baby.

Total still birth rate during this period at DH, Bahraich was 41.63 per thousand birth, which is much higher than the WHO estimated rate of 22 per 1000 total births. Currently 98% of still births occur in low to middle income countries and India has highest number of still birth, with an estimated 592100 deaths per year.[13] As most of the still births are preventable with evidence based interventions, Indian government has adopted a India Newborn Action Plan (INAP) to reduce still birth rate <10 per 1000 live births by 2030, recognizes the need to improve pregnancy care and institutional delivery among disadvantaged socio economic groups who have a higher risk of fetal and maternal death.

Maternal mortality ratio is 510 per lakh live birth which is three times of national maternal mortality ratio in 2013 which was 167 per lakh live birth. This highlights the need for scaling up awareness regarding JSSK scheme and emergency referral system, maternal death audit and improvement in the management of health services at all levels.

Nearly 1/4th (30 patient) of the referrals were due to severe anemia. Referral rate due to anemia is much higher than Shenoy HT et al study in tertiary care centre of Kerala (14% referral due to severe anemia) and Kant et al study in secondary level hospital Haryana (5.08%).[13] In Gupta et al, 18.05% and in Panchal and Patel, 15% referral was due to anemia, less in compare to our study. In our hospital, though 24 hrs blood bank facility is available but ICU is not equipped with ventilators, monitors, central oxygen supply, central suction and also health personnel were not trained enough.[14,15]

Other causes include eclampsia and severe preeclampsia (23 patients or 16.55% of total referred patients) comparable to the referral rate due to pregnancy induced hypertension (17%) in Kant et al and much less in comparison to Agarwal et al

(27.6%)[16]. 9.35% cases were referred due to previous LSCS due to unavailability of trained staff and specialist at the study centre on that particular days, is comparable to Shenoy HT et al (8.87%), Kant et al (10%) and Jakhar and Choudhary study (11.44%).

Chaturvedi et al in their study reported that when either an obstetrician or anaesthetics was on leave, adequate cover was not provided due to lack of human resource and hence, there were more referral. 7.19% patients were referred due to prematurity as SNCU is not well equipped to manage preterm neonates <1800gm as well as sick newborn. Kant et al reported one third referrals were due to prematurity (30.6%) and only 0.49% referral in Jakhar and Choudhary study. Other causes of referrals in our study are jaundice (2.16%), fetal anomalies (2.16%), sepsis (1.44%), failed regional anaesthesia (1.44%), IUGR (0.72%), ruptured uterus (0.72%), heart disease (0.72%), renal failure (0.72%), HBsAg (0.72%) comparable to Jakhar and Choudhary study. In Kant et al referral due to IUGR (4.4%) is much higher while 1.3% patients referred due to maternal medical conditions as seen in our study. Referral-out data was missing for 23 patients (16.55%). In Shenoy HT et al 2.41% has no record of the referral, while 25.81% patients reported with unstructured records, Kant et al reported 10.4% referrals with missing data. This inadequate referral communication is resulting into loss of time in preparing the patient, re-establishing diagnosis.

3/4 of total referred patients were coming from the distance of >10 km. Even 18% of total referred patients were travelling a distance of >50 km. M. S. Kulkarni et al shows the influence of distance of health centre from home that use of antenatal care decreased significantly with corresponding increase in distance of health centre from home.[13] 1/3rd of the referred patients were visiting the study centre with unstable vitals, showing delayed consultation of antenatal women thus increasing morbidity and mortality. In Jakhar and Choudhary study, 5.3% of referred patients required ICU admission, Gosami and Makhija shows 12.34% cases required ICU admission.[17]

As our study is based on secondary analysis of data recorded by other health personnel, there are few missing data variables like exact hemoglobin of patients, gravida, gestational age, age of patients at the time of referral, highlights need of more stringent documentation of data in referral slip. Also in our study, follow up of patients referred was not available, limiting quality assessment of referrals. There is need of coordination between referral centre and higher centre for improvement in quality care provided to patients.

Conclusion

This study highlights the deficient human resources, infrastructure and equipment at district hospital level leads difficulty in the provision of EmOC. There is need of coordination between referred and referring centre and monitoring of quality of care provided at lower level health system. There is need of channeling of awareness regarding health facilities, programmes and establishment of new government runned healthfailities to avoid distance factor. Strengthening of these facilities would decrease burden on tertiary care centers.

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