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Retraction

The article "Maternal outcome of term obstetric emergencies referred to tertiary care centre" is retracted by the Editor-in-Chief, due to violation of the policies and practices of International Journal of Reproduction, Contraception, Obstetrics and Gynecology.[1] The article is retracted due to error in data informed by corresponding author.

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1. Badal S, Singh LR. Maternal outcome of term obstetric emergencies referred to tertiary care centre. Int J Reprod Contracept Obstet Gynecol 2021;10:2843-7. DOI: http://dx.doi.org/10.18203/2320-1770.ijrcog20212678.

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Original Research Article

Maternal outcome of term obstetric emergencies referred to tertiary care centre

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ABSTRACT

Background: Lack of basic facilities at ground level in backward areas of country affect the outcome of obstetric emergencies thereby affecting maternal morbidity and mortality. This study was conducted to compare the outcome of term obstetric emergencies referred to tertiary care centre.
Method: This prospective observational study was conducted to study the maternal outcome in obstetric emergencies referred to our institution.
Results: Most of the patients were exhausted (59.47%). Majority were referred for prolonged labour (47.71%), previous cesarean section (16.33%), pre-eclampsia (13.07%) and eclampsia (1.96%). Most patients were given more than one intervention. Emergency LSCS was the common mode of delivery (39.86%).
Conclusions: It is important to improve the conditions of peripheral health care centre with amenities like specialist doctors and transport. Awareness of population, attitude buildup is important for early referral to resist care centre to improve outcome of pregnancy.

Keywords: Emergency obstetrics care, Obstetric emergencies, Maternal outcome, Referred obstetric emergencies

INTRODUCTION

The world has come a long way from the times "When a woman surviving childbirth was considered to be blessed with 'A Second life' to the present WHO theme stating "Every mother counts!"

The government of India (RCH Facility survey, GOI 2003) conducted a study to know the primary reasons of referral in obstetric emergencies, which showed that in many states like UP, Rajasthan, Orissa, North Eastern states, etc.[1]

At level of primary health centers, a labor room and emergency drugs (that should be available) for managing labor were available in less than 5% of the PHCs.

At level of community health centers, only a quarter (26.9%) of the CHCs had a labor room, and less than half (48%) had a labor room kit (where emergency services should be available) over the whole country. Nearly 30% had an obstetrician/gynecologist, less than 10% had an anesthetist. Hence after being referred from rural PHCs also, quality services are difficult to be provided.

At level of district hospital, the staff trained in emergency obstetric care was available in less quantity.

The 3-tier healthcare delivery system is designed in a manner to refer a patient in need of a higher level of expertise and care accordingly, from primary to secondary to tertiary level, and if necessary, from primary directly to tertiary level center.

"Emergency obstetric care" has been recognized and programmed as AMDD (Averting maternal death and disability) in 1999 to work with developing countries on

improving the quality, availability and utilization of EmOC. In India AMDD is working in conjunction with UNICEF and UNFPA.[2]

Delays of obstetrics are delay in making a decision to seek treatment, delay in reaching to the healthcare center, delay in receiving quality treatment.[3] The delay in, making a decision to seek treatment, reaching health care centre and receiving quality treatment results in maternal and neonatal deaths at home beyond the reach of any health care personnel. Currently all the international policies are being made to provide skilled birth attendants and improved obstetric care in health care facilities which is not a credible strategy for reducing mortality in populations where most mothers deliver at home.[4]

Present study was conducted to study the maternal outcome in referred obstetric emergencies.

METHODS

In this prospective observational study, all pregnant female (both primigravida and multigravida) who were referred as obstetric emergencies with gestational age>37 weeks with established labour were included in the study. All booked patients with gestational age<37 weeks which are not emergencies and if having medical or surgical complications were excluded from the study. Study was conducted during the period of November 2014 to September 2016.

Indication of referral, general condition at the time of admission, immediate intervention done and mode of delivery were recorded. Maternal complications, tertiary level facility provided and duration of hospital stay were also recorded.

Detailed clinical history including parity, obstetrical history was taken as per proforma attached. General examination, systemic examination, obstetrical examination was done. All the routine investigations including complete hemogram, urine routine examination, liver and kidney function test, ABO grouping and Rh typing, blood sugar estimation were carried out. Depending on the general condition of the patients, immediate management was done. Patients in shock were resuscitated with crystalloids followed by colloids, and even blood transfusion was done as per necessitation. Patients with severe hypertension were managed with injectable antihypertensives (Labatolol), while those with seizures (eclampsia) were given injection magnesium sulphate as per Pritchard's regimen. Definitive interventions were case depended. In cases of prolonged labour-after assessing the cause measures such as augmentation with oxytocin followed by vaginal delivery, augmentation with oxytocin followed by instrumental vaginal delivery. In obstructed labour, emergency lower segment cesarean section was done. In borderline pelvis, trial of labour followed by vaginal (or instrumental) delivery of baby. In cephalopelvic disproportion, depending on the grade: if severe then lower segment cesarean section or if mild then vaginal (or instrumental) delivery of the baby was done. In malpresentations and malposition, accordingly vaginal delivery or emergency lower segment cesarean section was done. In pre-eclampsia and eclampsia, control of hypertension followed by induction and delivery of baby was done. In obstetrical hemorrhage, depending on the cause measures were taken. In abruptio-placentae, augmentation with oxytocin followed by vaginal delivery (as most of them were already IUD). In placenta previa, emergency lower segment cesarean section was done. In post-partum hemorrhage, uterotonics were given along with resuscitation of patient, followed by exploratory laparotomy and hysterectomy in non-responding patients. In uterine rupture, exploratory laparotomy followed by rent repair or hysterectomy as per necessitated. In retained placenta, resuscitation followed by manual removal of placenta under general anesthesia was done. In retained second twin, depending on the condition of mother and baby, if live and cervical OS fully dilated, oxytocin augmentation followed by vaginal (or instrumental) delivery of the baby was done.

Plan for statistical analysis

Data collected were checked for consistency and completeness. Then it was entered in database software SPSS 21.0 version. Analysis was carried out wherever required to evaluate the results using descriptive statistics. Test of significance using Chi-square test was done and $p<0.05$ was considered significant.

RESULTS

Total of 153 obstetric emergencies were enrolled for the study. The general condition of most of patients were exhausted (n=91), fair in 44 patients, 14 in shock, 3 with pallor, 3 with seizures, and 1 with septic shock as shown in Table 1.

Table 1: General condition of patient at the time of referral.

General condition	Frequency	Percentage (%) (out of 153 cases)
Fair	44	28.75
Exhausted	91	59.47
Shock	14	9.15
Seizures	3	1.96
Septic shock	1	0.65
Pallor	3	1.96

Majority were referred with indication of referral as prolonged labour in 47.71%, followed by previous caesarean section in 16.33%, pre-eclampsia and severe pre-eclampsia in 13.07%, gestational hypertension in 2.61%, eclampsia in 1.96%, placenta previa in 3.26%, abruptio-placentae in 1.96%, PROM in 11.76%, uterine rupture in 3.92%, multiple gestation (twin pregnancy)

found in 1.30%, retained second twin seen in 2.61%, retained placenta found in 1.96%, anemia in 3.92%, post-datism in 7.84%, mismanaged labour in 6.5%, bad obstetric history in 1.30%, oligohydramnios in 1.96%, polyhydramnios in 1.30%, Rh negative pregnancy in 1.96%, grandmultiparity in 3.92%, perineal tear in 0.65%, hepatitis and HIV reactive in 1.30 and 2.61%, post-partum hemorrhage in 5.22%, intrauterine death in 1.96% cases were also reported (Figure 1).

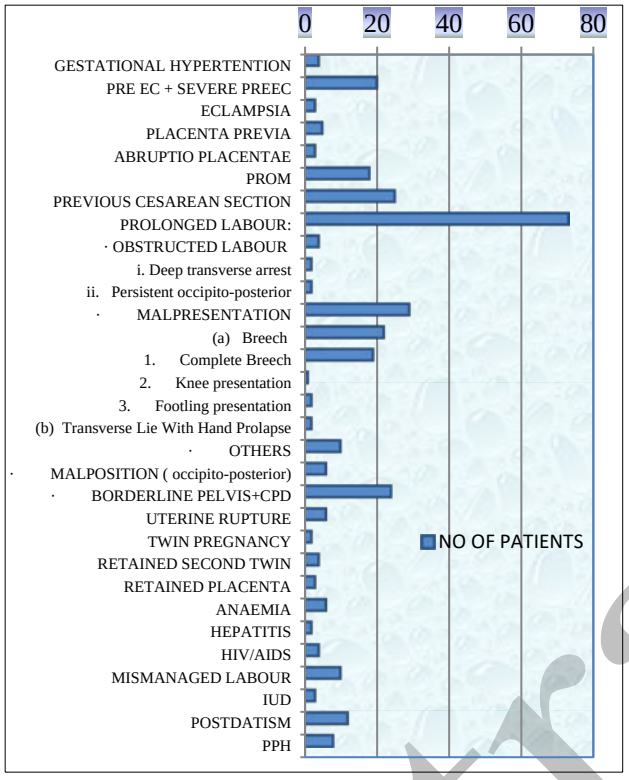

Figure 1: Distribution of indication of referral.

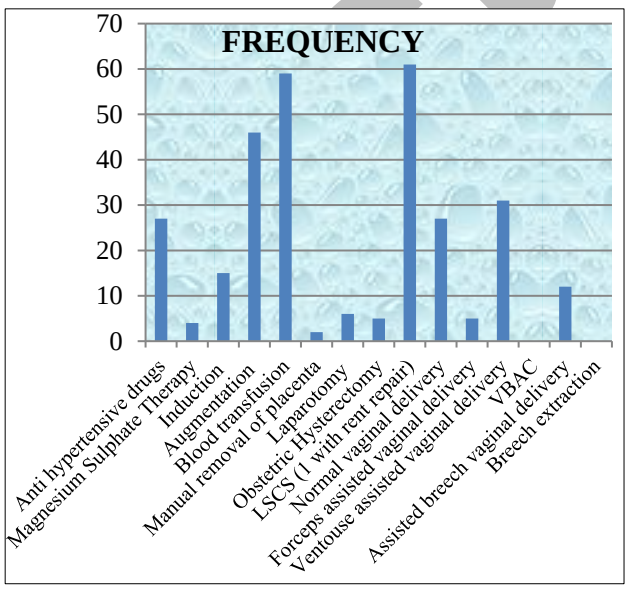

Figure 2: Various interventions adapted for management.

Most of the patients were given more than one intervention (Figure 2).

Anti-hypertensive medications were given to patients with gestational hypertension, pre-eclampsia, and severe pre-eclampsia in 27 cases.

Seizures controlled with $MgSO_4$ therapy in 4 patients.

Blood transfusion was given to 62 patients.

Manual removal of placenta was done in two cases out of three cases of retained placenta as one patient with retained placenta underwent hysterectomy.

Laparotomy was done in six patients for uterine rupture where hysterectomy was done in 5 patients and 1 patient underwent rent repair.

Emergency LSCS was done in 61 patients, 29 patients delivered by Normal vaginal delivery, five were Forceps assisted vaginal delivery, 31 were ventouse assisted vaginal delivery, 7 were VBAC and 12 by assisted breech vaginal delivery (of which one was breech extraction) as shown in Table 2.

Table 2: Mode of delivery.

Mode of delivery	Frequency	Percentage (%)
LSCS (1 with rent repair)	61	39.86
Normal vaginal delivery	27	17.64
Forceps assisted vaginal delivery	5	3.26
Ventouse assisted vaginal delivery	31	20.26
VBAC	7	4.57
Assisted breech vaginal delivery	12	7.84
Breech extraction	1*	0.65

Complications encountered during the study (Figure 3) were a lot considering the emergency situation and referral time. PPH was encountered in 51 patients, anemia in 25, foetal distress in 16 patients, shock in 11 patients, headache in 8 patients, MSL in 6 patients, blurring of vision and DIC in 4 patients each, pyrexia, vulval edema, seizures and acute renal failure in 3 patients each, HELLP syndrome and septic shock in 2 patients each and one patient each had hematuria, uterine rupture, Couvelaire uterus and burn injury. Sixty-eight patients had no complication during their course of treatment.

As per Table 3, the tertiary level facilities given to the patients included transfusion (61 patients), HDU services (38 patients), universal precautions facility (6 patients), infra-red radiation to vulva (3 patients), hemodialysis (3 patients) and ICU care (2 patients).

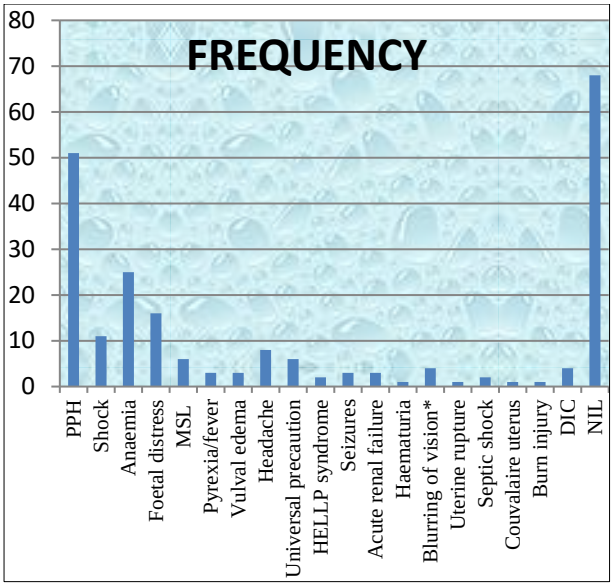

Figure 3: Complications.

Table 3: tertiary level facilities.

Tertiary level facilities	Frequency	Percentage (%)
Transfusion (PRBC and platelet)	61	39.86
HDU	38	24.83
Infra-red radiation to vulva	3	1.96
Hemodialysis	3	1.96
ICU	2	1.30
Universal precaution	6	3.92

Maternal complications were found to be more in Primigravida (58.2%) as compared to multipara (51.2%) was statistically not significant (p>0.05) (Table 4).

Most of the patients (114) were discharged within 5 days, 28 patients were discharged within 6-10 days, 6 patients within 11-15 days, 3 patients within 21-25 days and 2 patients within 26-30 days as shown in Table 5.

Table 4: Comparison of maternal complications and parity.

Maternal complications		Yes (%)	No (%)	Total	P value
Parity	**Primigravida**	39 (58.2)	28 (41.8)	67 (100)	0.385 (NS)
	Multipara	44 (51.2)	42 (48.8)	86 (100)	
Total		83 (54.2)	70 (45.8)	153 (100)	

Table 5: Duration of stay.

Duration of stay (Days)	Frequency	Percentage (%)
0-5	114	74.50
6-10	28	18.30
11-15	6	3.92
16-20	0	0
21-25	3	1.96
26-30	2	1.30

DISCUSSION

Among 153 patients who were referred to our hospital, 91 women were exhausted, 44 women were fair,14 women were in shock, 1 patient came in septic shock, 3 patients came with pallor, 3 with seizures (Table 1).

Charu et al also found 45% of patients who were already in critical state.[5]

Sharma reported that the general conditions of patients on admission were unsatisfactory in 69.5% cases; majority arrived in a state of dehydration, exhaustion, with ruptured membranes, and infections. 15.5% cases were unconscious and in shock.[6]

Majority were referred with indication of referral as prolonged labour in 47.71%, followed by previous caesarean section in 16.33%, pre-eclampsia and severe pre-eclampsia in 13.07%, gestational hypertension in 2.61%, eclampsia in 1.96%, placenta previa in 3.26%, abruptio-placentae in 1.96%, PROM in 11.76%, uterine rupture in 3.92%, multiple gestation (twin pregnancy) found in 1.30%, retained second twin seen in 2.61%, retained placenta found in 1.96%, anaemia in 3.92%, post-datism in 7.84%, mismanaged labour in 6.5%, bad obstetric history in 1.30%, oligohydramnios in 1.96%, polyhydramnios in 1.30%, Rh negative pregnancy in 1.96%, grandmultiparity in 3.92%, perineal tear in 0.65%, hepatitis and HIV reactive in 1.30% and 2.61%, post-partum haemorrhage in 5.22%, intrauterine death in 1.96% cases were also reported (Figure 1).

Sharma reported that majority of patients were referred for hypertensive disorders of pregnancy (16.4%), malpresentation (5.40%), obstructed labour (2%), antepartum hemorrhage (3%), moderate to severe anemia (44.82%) cases and pregnancy with previous caesarean section (5%).[6]

Rathi et al found hypertensive disorders of pregnancy (26%) as major cause of referral, followed by preterm labour (26%), and medical disorders complicating pregnancy (21%), while in study hypertensive disorders of pregnancy accounted for 17.64% of referral indication.[5]

Patel et al reported the causes of referral as preeclampsia (16%), followed by anaemia, malpresentations (15%), previous caesarean section (7.62%), and MSL (5%).[7]

Khatoon et al reported previous caesarean section in 15%, which is similar to our study (16.33%).[8] Due to unavailability of operation theatre, gynecologist, anesthetics, trained staff or basic infrastructure, the patients with previous caesarean section are referred to higher centres from PHC/CHC.

The present study shows that PPH or obstetric hemorrhage is the leading maternal complication in referred obstetric cases at term (Figure 3).

Patients who had complications were given tertiary level facilities adding to cost of treatment and duration of stay.

It has been observed that duration of stay correlates with complications and adds to the cost of treatment, adding to the economic burden on already under privileged patient's family.

CONCLUSION

The present study has shown that, in current scenario improper intra-natal care, non-availability of skilled birth attendants, lack of adequate facilities and poor accessibility for MCH services are the major causes of referral to tertiary health centers from rural areas being responsible for most of the maternal and perinatal morbidity and mortality. EmOC had been developed for this and had launched a programme as AMDD in 1999 to improve the quality, availability, and utilization of health services. Thus, most of the obstetric emergencies can be prevented that cause majority of maternal and foetal morbidities and mortalities.

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

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