

**Analysis of maternal outcomes in referred term obstetric emergency cases to tertiary care centre****Dr Milky Sureshkumar Patel\***, **Dr Pooja Batukbhai Ghori\*\***, **Dr Charmi Kiran Pawani\*\*\***

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**KEY WORDS** : Emergency obstetrics care, Obstetric emergencies, maternal outcome, Referred obstetric emergencies.

**ABSTRACT**

**Background** : The major drawback leading to maternal morbidity and mortality in our country is lack of basic facilities and delayed referral to the tertiary care centre. This study was conducted to identify the pattern of obstetric referral and its primary reasons and compare the outcome of term obstetric emergencies referred to tertiary care centre.

**Method** : This prospective observational study was conducted for period of 6 months from December 2020 to May 2021 in G.K.General hospital Bhuj, all term referred cases were analysed for cause of referral, their condition and outcome.

**Results**: Most of the patients were exhausted (34.16%). Majority were referred for anemia (12.55%), previous cesarean section (11.68%), prolonged labour (8.2%), pre-eclampsia (3.03%) and eclampsia (1.73%). Most patients were given more than one intervention. Emergency LSCS was the common mode of delivery (43.63%).

**Conclusions**: Our study concluded that the major contributors of poor pregnancy outcome were illiteracy and ignorance of females regarding health care requirements and poor infrastructure. Prompt identification of high risk factors should be done, health care workers should be trained in essential and emergency obstetrics care, timely referral is crucial for a satisfactory maternal and fetal outcome

**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!"

An obstetric emergency can be defined as a situation of serious and often dangerous nature developing suddenly and unexpectedly and demanding immediate attention in order to save life. Pregnancy and childbirth are the physiological events occurring in lifetime of a woman which are associated with many obstetrical problems which lead to maternal morbidity and mortality like post partum hemorrhage, hemorrhagic shock, anemia and eclampsia.

Due to illiteracy and lack of seeking of antenatal healthcare to health facilities, there has been delays in the identification of preventable high risk factors in an antenatal woman and delay in referrals to the tertiary care centres.

The other factors contributing to 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.

There has been major changes in handling obstetric emergencies as per new guidelines emerging

At the level of primary health centres, basic facilities of a clean labour room with all emergency drugs to manage labour efficiently and trained staff are required which is lacking at many centres.

At the level of community health centres, there is lack of skilled obstetricians and an anesthetist which will require referral of the patient to a tertiary health centre.

At the level of tertiary health centres, there is availability of obstetricians, anesthetists and blood banking facilities with proper OT set-up and ICU facilities.

Primary care services are incomplete if they lack appropriate and efficient referral systems to secondary and tertiary care hospitals.

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

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secondary to tertiary level, and if necessary, from primary directly to tertiary level center.

It is recommended to electively refer pregnant women with previous cesarean section, breech presentation, transverse lie, multiple gestation, hypertension and severe anemia for a delivery before any complication arises to health care centre where all the facilities to deal with the complications are available.

Our hospital being the only tertiary care centre in our district, we receive a lot of term referred cases for the same reasons, where the most common reason in our district for delays and adverse outcomes being long distance between the primary site of referral to the tertiary care centre with other contributing factors like illiteracy, more number of pregnancies, no antenatal visits, financial constraints, fear of approaching higher centres, fear of covid 19 in recent era.

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.

#### 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 December 2020 to May 2021.

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. 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 and viral markers 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 previous cesarean sections were evaluated and accordingly trial of scar or lower segment cesarean

sections were done. 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 preeclampsia 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. 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 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 120 obstetric emergencies were enrolled for the study. The general condition of most of patients were exhausted (n=41), fair in 33 patients, 9 in shock, 22 with pallor, 12 with seizures, and 3 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 120 cases)
Fair	33	27.5
Exhausted	41	34.16
Shock	9	7.5
Seizures	12	10
Septic shock	3	2.5
Pallor	22	18.33

**Distribution of indication of referral :**

Majority were referred with indication of referral as anemia in 12.55%, previous caesarean section in 11.68%, prolonged labour in 8.2%, post-partum hemorrhage in 8.65%, pre-eclampsia and severe pre-eclampsia in 3.03%, gestational hypertension in 2.59%, eclampsia in 1.73%, placenta previa in 1.51%, abruptio-placentae in 2.3%, PROM in 4.76%, uterine rupture in 1.73%, multiple gestation (twin pregnancy) found in 6.92%, retained second twin seen in 0.21%, retained placenta found in 1.08%, postdatism in 3.89%, hepatitis and HIV reactive in 2.59 and 4.76%, intrauterine death in 6.92% cases were also reported.

**Various interventions adapted for management :**

Most of the patients were given more than one intervention. Anti-hypertensive medications were given to patients with gestational hypertension, pre-eclampsia, and severe preeclampsia in 30 cases. Seizures controlled with MgSO<sub>4</sub> therapy in 4 patients. Blood transfusion was given to 42 patients. Manual removal of placenta was done in three cases out of five cases of retained placenta as two patient with retained placenta underwent hysterectomy. Laparotomy was done in three patients for

**Table 2 : Mode of delivery.**

Mode of delivery	Frequency	Percentage (%)
LSCS	72	43.63
Normal vaginal delivery	51	30.90
Forceps assisted vaginal delivery	5	3.03
Ventouse assisted vaginal delivery	11	6.66
VBAC	14	8.48
Assisted breech vaginal delivery	12	7.27

uterine rupture where hysterectomy was done in 4 patients and 1 patient underwent rent repair.

Emergency LSCS was done in 72 patients, 51 patients delivered by Normal vaginal delivery, five were Forceps assisted vaginal delivery, 11 were ventouse assisted vaginal delivery, 14 were VBAC and 12 by assisted breech vaginal delivery as shown in Table 2

Complications encountered during the study were a lot considering the emergency situation and referral time. PPH was encountered in 40 patients, anemia in 58, fetal distress in 16 patients, shock in 9 patients, headache in 8 patients, MSL in 16 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 3 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), hemodialysis (3 patients) and ICU care (2 patients).

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

**Table 4: Comparison of maternal complications and parity.**

Maternal complications	Yes (%)	No (%)	Total	P value
Primigravida Parity	29 (65.90)	15 (34.09)	44 (100)	0.385
Multipara	44 (57.89)	32 (42.10)	76 (100)	(NS)
Total	73 (60.83)	47(39.16)	120 (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

Maternal complications were found to be more in Primigravida (65.90%) as compared to multipara (57.89%) was statistically not significant ( $p>0.05$ ) 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.

### DISCUSSION

Among 120 patients who were referred to our hospital, 41 women were exhausted, 33 women were fair, 9 women were in shock, 3 patient came in septic shock, 22 patients came with pallor, 12 with seizures (Table 1).

The general conditions of patients on admission were unsatisfactory in 90% cases; majority arrived in a state of dehydration, exhaustion, with ruptured membranes, and infections. 10% cases were unconscious and in shock.<sup>[6]</sup> Majority were referred with indication of referral as anaemia in 12.55%, followed by previous caesarean section in 11.68%, postpartum haemorrhage in 8.65%, pre-eclampsia and severe pre-eclampsia in 3.03%, prolonged labour in 8.2%, gestational hypertension in 2.59%, eclampsia in 1.73%, placenta previa in 1.51%, abruptio-placentae in 2.3%, PROM in 4.76%, uterine rupture in 1.73%, multiple gestation (twin pregnancy) found in 6.92%, retained second twin seen in 0.21%, retained placenta found in 1.08%, postdatism in 3.89%, hepatitis and HIV reactive in 2.59% and 4.76%, intrauterine death in 6.92% cases were also reported.

That majority of patients were referred for moderate to severe anemia (12.55%) cases and pregnancy with previous caesarean section (11.68%), hypertensive disorders of pregnancy (7.35%), malpresentation (6.49%), obstructed labour (3.89%), antepartum hemorrhage (3.89%), Anaemia of pregnancy (12.55%) as major cause of referral, followed by previous cs (11.68%), and hypertensive disorders of pregnancy accounted for 7.35% of referral indication.<sup>[6]</sup>

The causes of referral as Anemia, previous caesarean section, PIH, malpresentations, and MSL Due to unavailability of operation theatre, skilled obstetricians, anesthetics, blood and blood components, trained staff or basic infrastructure, the patients with previous caesarean section are referred to higher centres from PHC/CHC.

The present study shows that anemia, previous cesarean section and post partum hemorrhage were the leading causes in maternal complication in referred obstetric cases at term

### 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.

The distance of referral institutes from phc is directly proportional to the propensity of obstetrics complications. Most of the maternal complications occurs in the third trimester of pregnancy. Anemia has a major burden on maternal morbidity and mortality. Hemorrhage, hypertensive disorder of pregnancy, perpuerial sepsis, ruptured uterus, cardiac failure due to severe anemia and viral hepatitis which are unbooked and referred from a greater distance are the major cause of maternal mortality.

The health care workers at primary centres should be trained properly. Health education and awareness by mass media and non-government organization can improve the health and social status of women in our country.

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