

## Study of maternal and perinatal outcome in referred obstetric cases.

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### Abstract

**Objective-** to review the referred obstetric cases for reason of referral and to study the maternal and perinatal outcome. **Design-** Prospective study. **Study period-** May 2017 to June 2018. **Study population-**All obstetric cases referred to the department of obstetrics and gynaecology of Adichunchnagiri Hospital, B G Nagara during the study period. **Results-** In the present study, maximum number of patients (62.96%) were in the 20- 30 years of age group. Majority of the referral cases were primigravida 65 (48.1%). Out of 135 referred cases, 106 (78.51%) delivered 18(13.3%) were treated conservatively. In 11 patients (8.1%) either abortion occurred or medical termination of pregnancy was done or there was ectopic pregnancy or tears. Out of the 106 cases who delivered at our institute majority of the babies were delivered 65(61.3%) delivered normally, while 41 (38.67%) underwent caesarean section. There were 25 NICU admissions and 81 were healthy babies. Reasons for admission were varied. In the present study, premature rupture of membranes was the most common cause of referral. This is followed by pre-eclampsia and related conditions, and preterm labour being the next common cause.

**Key words:** referred obstetric cases, Perinatal outcome, neonatal outcome.

### Introduction

Pregnancy and childbirth are physiological processes. However they are not free of risks. Despite progress in medical field and improvement in available health care facilities, maternal mortality is still high in our country [1]. The objective of antenatal care is to detect high risk cases as early as possible from large group of antenatal patients and arrange them for skilled care. Therefore antenatal care, the primary aim of which is to achieve at the end of pregnancy a healthy mother and a healthy child, should be provided to every woman [2].

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 [3]. Referral services for identification and referral of high risk pregnancies are an integral part of maternal and child health services. For a large majority of developing countries this aspect of health system

remains weak [4]. Although most obstetric complications (defined as acute conditions such as postpartum haemorrhage, sepsis, eclampsia, and obstructed labor that can cause maternal death cannot be predicted, the majority can be treated with timely provision of a package of evidence-based interventions known as emergency obstetric care (EmOC) [5-7].

The availability of EmOC is considered to be an indicator of how well a health system is prepared to manage conditions leading to acute maternal morbidity and mortality [8,9]. Em OC refers to elements of obstetric care needed for management of complications during pregnancy, delivery and postpartum period, skilled personnel, equipment and support services. EmOC services are of paramount importance in reducing maternal mortality and morbidity [10].

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

Manuscript received: 10<sup>th</sup> June 2019

Reviewed: 20<sup>th</sup> June 2019

Author Corrected: 26<sup>th</sup> June 2019

Accepted for Publication: 30<sup>th</sup> June 2019

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the facilities to deal with the complications are available [10]. With this background present study was undertaken to evaluate the maternal and perinatal outcome in referred cases.

## Materials and Methods

**Study design-** Prospective study

**Study period-** May 2017 to June 2018

**Study population-**All obstetric cases referred to the department of obstetrics and gynaecology of Adichunchanagiri hospital and research centre, BG Nagara during the study period.

### Data collection

1. The study data was collected from case sheets of patients referred and managed at our hospital.
2. Detailed clinical history, place of referral, cause of referral was studied.
3. Complete physical and obstetric examination was done and relevant investigations were done.
4. Management of the patient, clinical course, mode of delivery (vaginal or operative or conservative) and maternal outcome was documented.
5. To know perinatal outcome, APGAR score was noted, if needed NICU admission cause for it was noted.

DESCRIPTIVE STATISTICS like percentages were used for analysis.

## Results

Secondary data analysis of referral slips to our hospital, Adichunchanagiri hospital, was done. After thorough analysis of data following observations are put forward. A total of 135 cases were referred to the higher centre due to various reasons. Copy of all referral slips had been preserved. These referral slips have been studied retrospectively.

Maximum number of cases in present study were in the age group of 20-30 years comprising 62.96% of total cases.

**Table 1: Age Distribution**

<20 years	36
20-30 years	85
>30 years	14

Majority of the referral cases were primigravida 65 (48.1%).

**Table 2: Parity-Wise Distribution**

Primigravida	65
Multigravida	63
Grand multigravida	7

Out of 135 referred cases, 106 (78.51%) delivered 18 (13.3%) were treated conservatively. In 11 patients (8.1%) either abortion occurred or medical termination of pregnancy was done or there was ectopic pregnancy or tears which were managed according to set protocol depending upon the gestational age at diagnosis.

**Table 3: Outcome of the Antenatal Cases**

Outcome of ANC	No. of cases	Percentage
Delivered	106	78.5
Abortion /ectopic	11	8.1
Conservative	18	13.3
<b>Total</b>	<b>135</b>	<b>100</b>

Out of the 106 cases who delivered at our institute majority of the babies were delivered 65(61.3%) delivered normally, while 41 (38.67%) underwent caesarean section.

**Table 4: Mode of Delivery.**

Normal Delivery	65
LSCS	41

Out of 106 deliveries, there were 25 NICU admissions and 81 were healthy babies. Reasons for admission were varied.

**Table 5: Reasons for NICU Admission.**

Reason for admission	No. of cases	Percentage
Preterm care	10	40
Meconium aspiration syndrome	6	24
Jaundice	3	12
Sepsis	1	4
Transient tachypnoea of newborn	2	8
Low birth weight	1	4
Asphyxia+ death	1	4
Hypoglycaemia	1	4
<b>Total</b>	<b>25</b>	<b>100</b>

In the present study, premature rupture of membranes was the most common cause of referral. This is followed by pre-eclampsia and related conditions, and preterm labour being the next common cause.

**Table 6: Causes of referral.**

Preterm Labour	11
PROM	20
Pre-eclampsia and related condition	19
Cardiac disease	1
Crossed dates	9
Prev LSCS	6
Antepartum hemorrhage	8
Postpartum hemorrhage	6
MSAF	15
Malpresentation	2
Non availability of blood	6
Non availability of doctor	4
No details	7
Ectopic	1
Short stature	2
Anaemia	9
Fetal distress	9

Out of 135 referrals, most common referral was during intra-partum period. Intranatal referral was done in 89 (65.9%) cases.

**Table 7: Most common period during which patients were referred.**

Period of pregnancy	No. of cases	Percentage
Intrapartum	89	65.9
Antenatal	34	25.1
Postpartum	12	8.8
<b>Total</b>	<b>135</b>	<b>100</b>

## Discussion

Labour is a physiological process, but it carries an inherent risk of complications. Obstetrical care in the western world is at its peak. But in developing countries it is still at docks due to illiteracy, male dominant society and untrained birth attendants. Majority of the population living in the rural areas do not have accessibility to the maternity centres and may develop life threatening complications during labour [11].

The death of a woman in childbirth is a tragedy, an unnecessary and wasteful event that carries with it the huge burden of grief and pain. Pregnancy is not a disease and pregnancy related morbidity and mortality are almost preventable. Identification of atrisk patients and obstetrics emergencies and timely referral is of immense importance [10].

Morsheda Banu et al on assessing the overall age distribution found that the majority (74%) of the respondents were between 20-35 years [12]. In the study conducted by Prakriti Goswami et al, the maximum number of patients were in the age group of 20-30 years (78%) [10]. Similar kind of results was observed in the present study.

Gupta PR et al found 52.17% patients were primigravida [13], Prakriti Goswami et al found 47% patients were primigravida [10], Morsheda Banu et al had found that 50% of women were primigravida[12], which is comparable to the 48% primigravida cases found in the present study.

65.9%, 25.1%, 8.8% of the cases were referred to our hospital in their intapartum, antepartum and postpartum period respectively. Similar results are found by Prakriti Goswami et al where 56%, 30% and 14% of cases were referred in intrapartum, antepartum, postpartum period respectively [10] and also by Devinneri K et al in their "Study of spectrum of referral pattern at a tertiary teaching hospital toward better obstetric care"[14]. Out of the 106 cases who delivered at our institute majority of the babies were delivered 61.3% delivered normally, while 38.67% underwent caesarean section. Similar

results were obtained by Gupta PR et al where 69.48% of the patients underwent vaginal delivery and 22.75% of the patients had LSCS [13]. The caesarean section rates in the present study was found to be similar to the study conducted by Goswami et al (28%)[10]. In the present study, it can be concluded that the rate of caesarean section is substantially high in referred cases.

Patel HC et al in their study found that causes of referral were pre-eclampsia (16%) and meconiumstained liquor (5%) [15]. Sabale et al in their study found that pre-eclampsia and related conditions were a major indication for referral (25.79%) [2]. Rathi Charu et al noted that a majority of the cases were referred for pre-eclampsia and related conditions (26%), preterm labour (26%) and medical disorders complicating pregnancy (21%) [17]. In the present study, premature rupture of membranes was the most common cause of referral (15%). This is followed by pre-eclampsia and related conditions (14%), and meconium stained liquor (11%).

Previous caesarean sections were the cause of referral in 5% of cases in the present study which is similar to the study conducted by Goswami P et al(6%) [10], Khatoon A et al (15%)[16] and Gupta PR et al(7.62%)[13]. The patients with previous caesarean section are referred to higher centres from PHC/CHC due the unavailability of operation theatre, gynaecologist, anaesthesiologists, trained staff or basic infrastructure deficit [10].

In the present study, 7.4% of cases were referred due to non availability of blood and doctors; this can be compared to the study conducted by Goswami P et al where 16.87% of the cases were referred for the same reason. Government should take measures to improve health infrastructure facilities, make provisions for developing new blood banks and appoint trained gynaecologists in the peripheries to reduce the burden on tertiary centres [10].

13.3% of the total referred cases were managed conservatively and discharged. This rate is similar to the study conducted by Gupta PR et al (7.76%) [13],

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Poornima M et al (11%)[1], Goswami P et al (24%) [10]. Here arises the concept of day care management of referral cases at tertiary care institute which might be helpful in reduction of burden of tertiary care institute [13].

Khatoun A et al had in their study reported 87% live births, 13% still births, 26.5% preterm births [16]. Rathi Charu et al in her study found that 90% were live births and 9% were still births [17]. Poornima M et al in her study reported 91% live births and 9% still births [1]. In the present study, 99.05% were live births.

In the present study 4% had birth asphyxia and 23% had NICU admissions, which is comparable to the study conducted by Poornima M et al where 27% of the babies needed NICU admissions [1].

In the present study 40% of the NICU admissions were for preterm care, 24% for meconium aspiration syndrome, followed by 12% for neonatal jaundice. These results are similar to the findings found in the study conducted by Poornima M et al where 47% of NICU admissions were for preterm care, 28% for respiratory distress [1]. The high rate of NICU admission is due to preterm delivery.

The neonatal death rate is 4% which is similar to the neonatal death rate in study conducted by Poornima M et al (8%) [1], Sabale U et al (10.23%) [2], Gupta PR et al (4.43%)[13]. In contrast to this, the study conducted by Rathi Charu et al had a neonatal mortality rate of 28.23%[17].

## Conclusion

Childbirth is a normal physiologic process, but emergencies can arise anytime. The present study has shown that improper antenatal and intranatal care at the periphery level is responsible for poor maternal and perinatal outcome.

Hypertensive disorders of pregnancy have been one of the commonest causes of referral among high risk obstetric patients which can be better dealt at the tertiary care centre. Health care workers should be provided with the checklist; also administration of a dose of magnesium sulphate must be done in all cases of eclampsia and severe pre-eclampsia prior to referral.

The quality of information provided on the referral slips leaves a lot to be desired. Many of the slips had no vital data like blood pressure, pulse rate, temperature, and presence of foetal heart sounds. Also information

regarding treatment given before referral of the case was missing in most of the referral slips. The cause of referral was unknown in 3% of cases. This call for a more stringent documentation in referral slips and more coordination between the referral units and the higher centres are required. This study also recommends the development of a standard referral protocol, proper training in this regard and universal adherence to this in practice. Health education and awareness by mass media and non-government organisations can improve the health and social status of women in rural areas.

## Authors' contributions

**Dr. Mahendra G., Dr. Kavya B. S. and Dr. Ravindra S. Pukale** carried out the study. **Dr. Kavya B. S.** developed the theory and performed the computations. **Dr. Mahendra G.** verified the analytical methods. **Dr. Kavya B. S.** to investigate more on reasons for referrals. All authors discussed the results and contributed to the final manuscript.

**Funding:** Nil, **Conflict of interest:** Nil

**Permission from IRB:** Yes

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**How to cite this article?**

Mahendra G, Kavya B. S, Pukale R. S. Study of maternal and perinatal outcome in referred obstetric cases. *Obs Rev: J obstet Gynecol* 2019;5(2):106-111. doi:10.17511/joog.2019.i02.04.

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