**Scholars Journal of Applied Medical Sciences (SJAMS)** **ISSN 2320-6691 (Online)**
**Sch. J. App. Med. Sci., 2017; 5(7C):2699-2703** **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjams.2017.v05i07.041

Original Research Article

# A Prospective Study of Third Trimester Obstetric Referrals: Maternal and Perinatal Outcome

**Mahajan A[1], Magon S[2]**
[1, 2] Punjab Institute of Medical Sciences Jalandhar, Punjab, India

***Corresponding author**
Dr. Amita Mahajan
Email: amitamahajanjlm@gmail.com

**Abstract:** The objective of this study was to study the maternal and fetal outcome of the 100 patients referred in the third trimester of pregnancy and to evaluate the impact of delayed referral on fetomaternal outcome. Design was Prospective Observational study. All postpartum patients and patients with early pregnancy complications (<28 weeks) were excluded from the study. In the present study, maximum (57%) cases were referred from PHC/CHC. PIH and Ante-partum haemorrhage were the leading most causes of referral. Requirement of maternal ventilation, acute tubular necrosis, post partum hemorrhage and puerperal fever were responsible for maternal morbidity. In the present study, there were 97 live births and 3 intra uterine deaths. 46 babies required NICU stay and there was a 4% neonatal mortality. Perinatal mortality, perinatal morbidity and maternal morbidity were all directly linked to delay in reaching the referral hospital. There is an urgent need for provision of 24 hours emergency obstetric care system with alert transportation readily available to women in need.
**Keywords:** Maternal morbidity, Maternal mortality, Perinatal mortality, Preeclampsia, Antepartum haemorrhage, Postpartum haemorrhage.

## INTRODUCTION

The referral system is an essential component of any health of any health systems which is particularly important in pregnancy and childbirth for providing access to essential obstetric care. Pregnancy and child birth are physiological processes. However these are not free of risks. Critical care in obstetrics has received much attention in recent times. Despite progress in medical field and improvement in available health care facilities, maternal mortality is still high in most of the developing countries. Efforts are underway to reduce the incidence of maternal mortality in the world and concern is increasingly being expressed about the incidence of maternal morbidity. Every day in 2015, about 830 women died due to complications of pregnancy and child birth. In 2013, an estimated 289,000 women died due to complications in pregnancy and childbirth, down from 523,000 in 1990 [1]. Maternal and perinatal mortality rates are the yardsticks and an index of efficiency of not only antenatal and intranatal care but also of the socio-economic conditions of the country. Despite the upgraded MCH services, over all maternal mortality and perinatal mortality rates in India are high. This high rate in our country is attributed to the large rural population (60%) and paucity of health care provision to the rural sectors. The disparity of demand and supply of quality health care and the timely non availability of skilled personnel like obstetrician, anaesthetist, OT facility, blood bank facility, lack of transport facilities have all contributed to the maternal and perinatal deaths. The deliveries conducted by trained skilled personnel globally are only 43% [2]. The solution to the problem of unsafe child birth is provision of premium maternal health services. The most effective approach to achieve safe motherhood is an active community based accessible health care system and institution of strong referral system [3]. All pregnant women are at risk of developing obstetric emergencies. Most life threatening complications occur during parturition and many of these are unpredictable. These require timely skilled medical and surgical interventions [4].

## MATERIALS AND METHODS

This study was conducted in Obstetrics and Gynaecology Department of Punjab Institute of Medical

Sciences, Jalandhar, Punjab (India) after obtaining permission from institutional ethical committee.

**Study population**

Randomly selected 100 patients referred to the hospital in third trimester of pregnancy during study period.

**Study design**

Prospective observational study

**Exclusion criteria**

- Post-partum patients
- Early pregnancy complications (<28wks)

A Proforma was designed especially to cover all the aspects of referral including cause, place, time of referral, type of transport, causes of referral and maternal outcome including salient features of history, examination, baseline and specific laboratory investigations, ultrasound were carried out in relation to clinical condition of patient. Management of the patient was documented in detail. Mode of delivery was noted i.e., whether vaginal or operative (C-Section). It also included neonatal outcome. Factors contributing to decision-making on mode of delivery were noted. Foetal outcome was noted regarding gestational age, live or still birth, birth weight, NICU admissions and reasons for NICU admission, clinical course of the baby before discharge of mother and if any complications occurred.

**RESULTS**

This study consists of 100 patients referred in third trimester of pregnancy at a teaching hospital. Table 1 shows the details of patients enrolled in the study.

**Table-1: Table showing details of the patients in study.**

| **Maternal Age** | |
|---|---|
| Age (In years) | No of Patients |
| 15-20 | 8 |
| 21-25 | 48 |
| 25-30 | 34 |
| >30 | 10 |
| **Number Of Antenatal Visits** | |
| 0-1 | 23 |
| 2 | 46 |
| 3 | 17 |
| 4 | 9 |
| 5 | 5 |
| **Literacy Level** | |
| Literate | 64 |
| Illiterate | 36 |
| **Background** | |
| Rural | 41% |
| Urban | 59% |

Majority of the patients were referred from CHC/PHC (57%). The main causes of referral are PIH (39%), APH (23%), severe anemia (16%), PROM (10%), mal-presentations (13%), fetal distress (5%), IUD (3%), oligohydramnios (6%) preterm labour (4%) and previous LSCS (7%) as shown in table 2.

**Table-2: Distribution of cases according to causes of referral.**

| Cause of Referral | % of Patients |
|---|---|
| Preeclampsia/Eclampsia | 39% |
| Ante partum Haemorrhage | 23% |
| Severe Anemia | 16% |
| Mal-presentations | 6% |
| PROM | 5% |
| Previous LSCS | 4% |
| Oligohydramnios | 3% |
| Fetal Distress | 2% |
| IUD | 2% |

89% patients were first referrals, only 11% were second referrals. Maximum cases were between the age group 21-25 years constituting 48% cases. Primigravidas contributed to maximum number of referrals (54%). In the present study, 62% cases were from distance of 0-50 Km reflecting major population catered by less than 100 Km to seek an emergency obstetric care which is an important contributing factor for maternal & perinatal outcome. In present study, there was unavailability of ambulance in 32% of cases for transport. In present study majority of patients (76%) arrived to the hospital within 4 hours of referral. The patients who reported to hospital >12 hours of referral were 5% in present study. In the present study, caesarean section rate was 60% in the referred cases. 5% of the total referred cases were managed conservatively & were discharged. There was no maternal mortality during the study period. Significant maternal morbidity was seen in 5 cases. 3 patients needed ventilator support and 2 patients had Acute Renal failure. Post partum fever was recorded in another 11% cases while PPH occurred in 4% patients as shown in table 3.

**Table-3: Table showing Maternal Morbidity.**

| Maternal Morbidity | Number of Patients |
|---|---|
| Maternal Ventilation | 3 |
| Acute Tubular Necrosis | 2 |
| PPH | 4 |
| Puerperal Fever | 11 |
| Blood Transfusion | 37 |

Total live births were 91% while 3% were intrauterine deaths. 46% babies needed NICU stay and 4% neonatal mortality was reported. Neonatal sepsis was the commonest cause of neonatal morbidity (25%) while 20% neonates required ventilator support. 13% neonates developed anemia. 48% of neonates requiring intensive neonatal care were of 28-32 weeks of gestation at birth. Postnatal mortality was seen in only 4% cases while IUDs were seen in 3% cases.

## DISCUSSION

In the present study mode of delivery in majority of the patients was caesarean section (60%). In present study highest referrals are from PHC/CHC (57%) followed by private sector (38%) which reflects the fact that our institute is primarily catering to the patients from middle to low socioeconomic strata of the society. Our institute charges are on lines of charges by PGIMER, Chandigarh which are much less than what private hospitals charge. Implementation of various government schemes has changed scenario of statistics in referral patients. In a study by Panchal *et al*. [5] 61% patients were referred from PHC/CHC followed by 33% from private sector. These results are comparable to our study where 57% patients were referred from PHC/CHC. Morsheda *et al*. [6], Gupta *et al.* [7] in their study observed that maximum patients belonged to the age group of 20-35 years. Gopinath *et al*. [8] also observed that 45% patients belonged to the age group 21-25 years. These results are similar to our observations where 48% patients were in the age group 21-25 years. In present study majority of patients (76%) arrived to the hospital within 4 hours of referral while it was 49% in the study done by Rathi *et al*. [9]. The

patients who reported to hospital >12 hours of referral were 5% in present study while in the study done by Panchal *et al*. [5] 24% patients reached after 12 hours of referral. Gopinath *et al*. [8] also reported that nearly two-thirds of patients reached the hospital in less than 1 hour of referral. Time interval of referral and reporting depends not only on availability of transport system and distance between the referral and tertiary health care centre but also on patients and her relative's attitude, awareness and socio-economic status and that reflects directly fetomaternal outcome. The relationship of time taken to reach the hospital and the maternal mortality could not be evaluated since there was no maternal death. But the duration to reach the hospital had a direct effect on the perinatal morbidity, mortality, maternal morbidity. Babu *et al*. [10] also made similar observations in their study. In the present study, PIH (39%), APH (23%) and maternal anemia (16%) were the commonest causes of referral to our institution. Ayesha *et al* [11]. in their study observed that PIH accounted for 27% cases being referred to their institution. Devineni *et al* [12]. in their study also observed that hypertensive disorders of pregnancy accounted for nearly one thirds of all the patients which were referred. In a study by Das *et al* [13], APH accounted for 20.5% cases of total referred cases. These results are similar to our study. Rathi *et al* [9] also observed that hypertensive disorders accounted for over one fourth of all referrals. In the present study, anemia accounted for 16% of all the referral cases. These results are comparable to studies by other researchers [5]. Rathi *et al* [9]. reported anemia as a cause of referral in nearly 45% patients. Maternal anemia is not only affecting the maternal health in antenatal period but also reflected on intrapartum and postpartum period. It can be prevented if early and adequate antenatal visits are taken by the patients. For this improvement of awareness of early antenatal visit is required. In present study mode of delivery in majority of the patients is caesarean section (60%) which is comparable to other studies [5, 11]. Patients are referred to higher centres when either it is high risk pregnancy or when conduction of normal vaginal delivery is difficult in primary set up. This may be the cause of higher caesarean section rate among referral patients. In the present study, perinatal mortality was seen in just 5% cases. Maskey *et al* [14] in a study also observed a neonatal mortality in 4.28% of live borns just like 6% neonatal mortality in a study by Panchal *et al* [5]. However, some studies like one by Rathi *et al*. [9] recorded 28% neonatal mortality. This difference is probably due to lesser number of preterm births in our study coupled with very good neonatal care facilities available in our institution. In our study, maternal morbidity was seen in 16% cases. Maskey *et al*. [14] in a study observed that intensive care management was required in 18.75% cases while Rathi *et al*. [9] observed that only 8% mothers needed intensive care. The variable number of patients needing ICU care reflects the fact that delayed referral leads to significant maternal morbidity.

## CONCLUSION

Maternal and foetal morbidity and mortality are indicators of available health services in any country. Various factors like lack of awareness regarding antenatal care, health education, financial constrains, environmental and cultural prejudices, male involvement in the maternal health, lack of transport facility and absence of patients counselling regarding prior planning of mode of delivery might be responsible for decompensated obstetrical condition at the time of presentation, so the conclusion is that complications of labour if not timely diagnosed and rectified results in adverse fetomaternal outcome. Most of the maternal deaths can be prevented and maternal morbidity, neonatal mortality / morbidity can be significantly reduced by timely diagnosis and interventions, either during pregnancy, labour or post-partum period. Access to high-quality health care that people need without suffering financial hardship is a human right and this can be made possible by strengthening the referral system and increasing the number of tertiary care centres which provide good maternal and neonatal care.

## REFERENCES

1. World Health Organization, UNICEF, UNFPA; the World Bank & The United Nations Population Division (2014). Trends in Maternal Mortality: 1990-2013. Estimated by WHO, UNICEF, UNFPA, The World Bank & The United Nations Population Division. Geneva: WHO
2. Limaye HR; Maternal and Fetal outcome in obstetric emergency cases referred From rural areas. J of Obst & Gynec in India, 1982; 32: 520-429.
3. World Health Organization. Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Geneva: WHO; 2010.
4. Travis P, Bennett S, Haines A, Pang T, Bhutta Z, Hyder AA, Pielemeier NR, Mills A, Evans T. Overcoming health-systems constraints to achieve

the Millennium Development Goals. The Lancet. 2004 Sep 10; 364(9437):900-6.
5. Panchal V, Patel Suchi; study of Maternal and Fetal outcome of patients referred in Third Trimester of Pregnancy at Tertiary care Hospital. Sch. J. App. Med Sci, 2015; 3(7A): 2449-2452.
6. Banu M, Nahar S. Assessing the MANOSHI Referral System Addressing Delays in Seeking Emergency Obstetric Care in Dhaka‟ s Slums.
7. Gupta PR, Chandari SN, Gonnade NV; Maternal and Fetal outcome in Referred Patients to Tertiary care Centre. Sch. J. App. Med. Sci., 2016; 4(SC):1624-31.
8. Gopinath S, Shafi M, Ramegowda HK, Mehta PK; Outcome of Referred Obstetric Emergencies At a Tertiary Center. Int J Biol Med Res, 2016; 7(2):5518-5521.
9. Rathi Charu, Gajria Kamal, Soni Neelu; Review of referred obstetric cases maternal and perinatal outcome. Bombay Hospital Journal, 2010; 52(1).
10. Babu S Patel, Gangopadhyay S, Vaishnat SB, Shrivastava RG, Rajagopalan R; Maternal mortality in Karamsad Medical College, the only rural M.C. in Gujrat. J Obst and Gyn of India, 2001; 51:63-66.
11. Ayesha Khatoon, Syeda Fariha Hasny, Saima Irshad, Junaid Ansari; An audit of obstetrics referrals to Abbasi Shaheed Hospital. Pak J Surg, 2011; 27(4): 304-308.
12. Devineni K, Sodumu N; A Study of Spectrum of Referral Pattern at a Tertiary Teaching Hospital towards better Obstetric Care. IAIM, 2016; 3(8): 193-198.
13. Das Lucy, Satapathy Umakant, Panda Niharika; Perinatal mortality in a referral hospital of Orissa – A 10 year review. Obstet Gynecol India, 2005; 55(5): 517-520.
14. Maskey S, Obstetric Referrals to a Tertiary Teaching Hospital of Nepal. NJOG, 2015;19(1):52-56.