

Study of Obstetric Referral Pattern in ICU admission at Tertiary Care Centre**Jhalak Agrawal¹, Rekha Wadhvani², Bharti Choudhary Parihar³, Juhi Agrawal⁴**¹Junior Resident, Department of OBG, Gandhi Medical College, Bhopal, M.P²Professor, Department of OBG, Gandhi Medical College, Bhopal, M.P³Professor, Department of OBG, Gandhi Medical College, Bhopal, M.P⁴Professor, Department of OBG, Gandhi Medical College, Bhopal, M.P

Received: 20-03-2023 / Revised: 21-04-2023 / Accepted: 13-07-2023

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Conflict of interest: Nil

Abstract:**Background & Method:** The aim of the study is to study obstetric referral pattern in ICU admission at Tertiary Care Centre. Data Collection was done for a prospective study by investigator. The information was collected using a predesigned proforma.**Result:** 8.15% of ICU admission was seen amongst all the referred patients and 2.32 % mortality. Mortality index was 0.05. Maternal near miss mortality ratio: 18.6 : 1.**Conclusion:** Hypertensive disorders of pregnancy: most common indication for ICU admission in the center associated with unbooked status.**Keywords:** Obstetric, ICU & Admission.**Study Designed:** Observational Study.

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Introduction

Referral services for identification and referral of high risk pregnancies are an integral part of maternal and child health services. It is an approach to decrease maternal mortality and near miss in our country. Time and again various policies and methods have been adapted in India for the same. For a large majority of developing countries this aspect of health system remains weak. In order to strengthen this NRHM & GOI starts various programs like LAQSYA, Janani Suraksha Yojna and establishment of Obstetric ICU etc. Timeliness and appropriateness of referral is an important factor in the ultimate outcome of the patients. Linking the primary, secondary and tertiary levels of care are an essential element of primary health care. Although most obstetric complications (defined as acute conditions such as postpartum hemorrhage, 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 in as emergency obstetric care (EmOC)[1,2]. 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. Timing the process is critical in preventing maternal death and disability. Maternal mortality can be significantly reduced if a system is in place to recognize problems promptly and to transport-a woman to a health

facility where she can receive appropriate and timely treatment.

Women die every year in India which contribute 20-25% of all maternal deaths in the world.[3] One estimate shows that with one maternal death, 15% pregnancies develop complication which necessitates tertiary obstetric care[3] and the vast majority of maternal deaths and injuries are avoidable when women have access to health care before, during and after childbirth. Of course there is improvement in maternal and child healthcare after the millennium declaration 2000, but there are lacuna across different states, Kerala being the most outstanding and Madhya Pradesh and Uttar Pradesh the worst performer.[4,5]. Madhya Pradesh has maternal mortality ratio of 173 per lakh live births in 2018-2020.

Decline in maternal mortality ratio in India from 130 to 97 per lakh live birth in 2014-16 and 2018-20 respectively.

Aims & Objective:

- Review the pattern of obstetric cases referred to tertiary care centre.
- To analyze rate & indications of Obstetric ICU admission in referred patient.

Material & Method

All obstetric patients referred to Department of Obstetrics and Gynaecology were studied.

- Rate & indication of the ICU admission was analysed along with fetomaternal outcome.
- All relevant investigation required for treatment of the patient.
- Data Collection and Each of the study subjects were contacted in person.
- Informed written consent was taken from patients. The information was collected using a predesigned Proforma.

Inclusion Criteria

- All referred (verbal & written) patients to tertiary care center.

Exclusion Criteria

- Booked patients at tertiary care centre.
- All patients who did not give consent.

Investigation Details

Sample Size: All pregnant women fulfilling inclusion criteria over the study period of 6 months.

NAME
AGE
OBSTETRICS HISTORY
PLACE OF REFERRAL
DURATION OF STAY AT REFERRAL
TIME OF REFERRAL
DATE OF REFERRAL
MANAGEMENT DONE AT REFERRAL CENTRE
MODE OF CONVEYANCE
TIME TAKEN TO REACH
MATERNAL OUTCOME

Figure 1: Proforma

Results & Inference

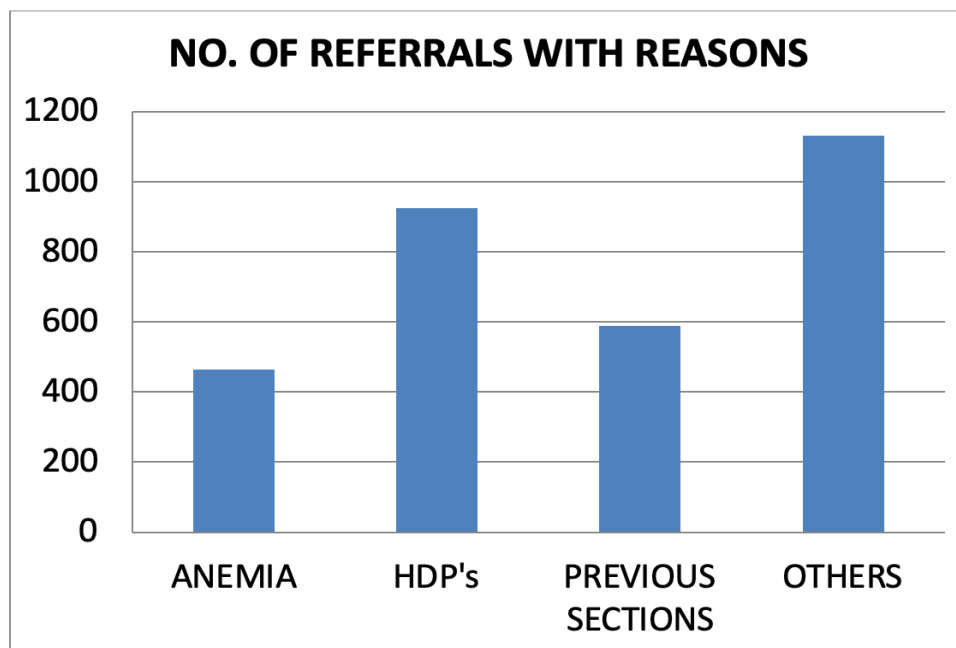


Figure 2: No. of referrals with reasons

Others Include

Breech	Polyhydroamnios
Prom	Heart Disease
Iufd	Gdm
Oligohydroamnios	Tranverse Lie
Fetal Distress	Contracted Pelvis
Abruption	Atonic Pph
Incomplete Abortion	Rupture Uterus
Hbsag	Cord Prolapse
Twin	Inevitable Abortion
Placenta Previa	Missed Abortion
Threatened Abortion	Molar Pregnancy
Ectopic Pregnancy	Vdrl Reactive
Traumatic Pph	Oblique Lie
Obstruction	Chickenpox
Congenital Anomaly	Triplet
Epilepsy	Retained Placenta
Boh	Jaundice
Plha	Pyrexia

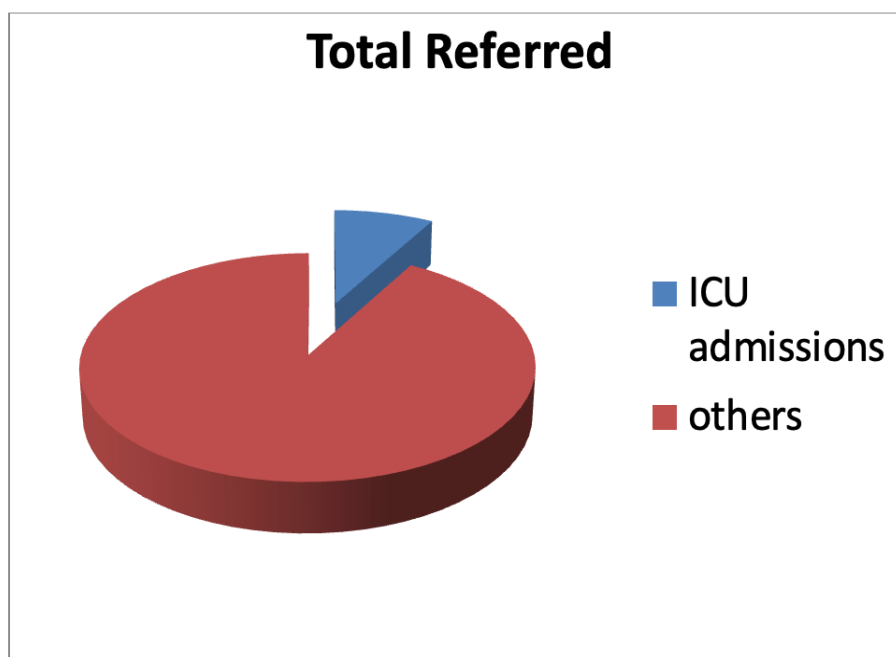


Figure 3: Representation of percentage of ICU Admission among referred patients

- 8.15% of ICU admission was seen amongst all the referred patients and 2.32 % mortality.
- Mortality index was 0.05.
- Maternal near miss mortality ratio : 18.6: 1.
- Maternal mortality: Measurement of maternal healthcare of a country.
- Maternal near miss: Pregnant or recently delivered women who survived a complication during pregnancy, childbirth or 42 days after termination of pregnancy. It compliments maternal death.
- Referral services: These form an integral part of maternal and child health services.
- The prevalence of near miss: It is high in developing countries.
- Reviewing near miss cases: helps in identifying failures and quality assessment of maternal health care.
- SDG reduction of MMR by <70 per 1 lakh live births by 2030.
- Maternal near miss indicators :
- Maternal near miss ratio: number of maternal near-miss cases per 1000 live births

- Mortality index: Maternal death / (Maternal near miss + Maternal deaths)
- Maternal near miss mortality ratio: ratio of maternal near miss and maternal deaths.

Discussion & Conclusion

Majority of cases were referred from CHCs (51.7%), next from District hospitals (22.68%), PHCs (10.94%), Sub centres (2.66%) and only 9 cases (0.88%) were referred from private hospitals and clinics[6]. A Study showed that 15.79% were referred from PHCs, 42.37% from DHs, 34.74% from referral hospitals and 2.63% from ESI (employee's state insurance) hospital. Study showed 61% referred from PHCs and CHCs, and 33% from private hospitals[7,8].

The reason for referral includes non-availability of obstetrician, anaesthetist, paediatrician, and lack of facilities to do caesarean section, lack of blood bank services, trained staff and equipments to manage obstetric emergencies[9]. Thus, it increases the referral and burden on tertiary centres and lowers their quality of health services. So proper equipment and manpower strengthening of existing first referral units (FRUs) is necessary to provide better services[10].

In the present study, majority of patients were referred for labour pain and for better management of active labour, 368 (36.29%), previous caesarean section 116 (11.44%), hypertensive disorders of pregnancy 74 (7.30%), APH 66 (6.51%) and anemia (8.58%)[11&12]. Other common causes were obstructed labour, mal presentations, CPD, PPH, PROM, fetal distress and preterm labour pain which shows negligence or inability of the health care providers at referring health centres in proper evaluation of patients. Gupta *et al.*[3] reported that majority of cases were referred for anemia (18.05%), hypertensive disorders of pregnancy (22.27%) and mal presentations (15.19%). Patel[7] reported that the common causes of referral were anemia (15%) and hypertensive disorders of pregnancy (15%). Other causes were pregnancy with previous caesarean section (12%), APH (6%), mal presentations (4%) and obstructed labour (4%).

Hypertensive disorders of pregnancy: most common indication for ICU admission in the center. Associated with unbooked status.

References

1. Puri A, Yadav I, Jain N. Maternal Mortality in an Urban Tertiary Care Hospital of North India. *J Obstet Gynaecol India*. 2011; 61(3):280-5.
2. Morsheda B, Shamsun N, Hashima EN; Assessing the MANOSHI Referral System Addressing Delays in Seeking Emergency Obstetric Care in Dhaka's Slums. MANOSHI Working Paper Series Manoshi-WP10:1-36 published by ICDDR, B, BRAC. 2010;10.
3. Gupta PR, Chaudhary SN, Gonnade NV. Maternal and fetal outcome in referred patients to tertiary care center. *Sch.J.App.Med.Sci*. 2016;4(5C):1624-63.
4. Devineni K, Sodumu N. A study of spectrum of referral pattern at a tertiary teaching hospital towards better obstetric care. *IAIM*. 2016;3(8):193-8.
5. Sakhare AP, Thakare P. Outcome of caesarean delivery in rural obstetric referrals, 51st Conference AICOG; 2008.
6. Vinayak NM, Panditrao SK, Ramkrishna MA. Critical study of referrals in Obstetric Emergencies. *J Obstet Gynaecol India*. 2004;54(3): 258-9.
7. Patel HC, Singh BB, Moitra M, Kantharia SL. Obstetric Referrals: Scenario at a Primary Health Centre in Gujarat. *Natl J Community Med*. 2012;3(4):711-4.
8. Khatoun A, Hasny SF, Irshad S, Ansari J. An audit of obstetrics referrals to Abbasi Shaheed Hospital. *Pak J Surg*. 2011;27(4):304-8.
9. Goswami D, Makhija A. A study of high risk obstetric referrals to tertiary care hospital in Garhwal, Uttarakhand. *IJSR*. 2015;4(10):1091-5.
10. Sorbye IK, Vangen S, Onoko O, Sundby J, Bergsjø P. BMC Pregnancy and Childbirth. Caesarean section among referred and self-referred birthing women: a cohort study from a tertiary hospital, north eastern Tanzania. 2011;11(55):1-10.
11. Maskey S. Obstetric referrals to a tertiary teaching hospital of Nepal. *NJOG*. 2015;19(1):52-6.
12. Begum S, Aziz-un-Nisa I. Analysis of maternal mortality in a tertiary care hospital to determine causes and preventable factors. *J Ayub Med Coll Abbottabad*. 2003;15(2):49-52