AUDIT OF OBSTETRIC REFERRED CASES IN TERTIARY CARE HOSPITAL OF PESHAWAR

Maimoona Qadir[1], Zubaida Akhtar[1], Farzana Niat[2]

ABSTRACT

Objective: This study aimed to determine obstetric referral characteristics and their causes.

Methods: This prospective observational study was conducted in the Gynae B unit, Khyber Teaching Hospital, Peshawar, from 1st January 2021 to 31st December 2021. All obstetric cases referred to this hospital during the study period were included. Detailed clinical history, including the age, parity, period of gestation if antenatal, and place of referral, were recorded. A thorough general physical and obstetrical examination was performed, and required investigations were sent. The patient's treatment, including vaginal delivery, cesarean section, and conservative management, was recorded. Data analysis was done using SPSS 22.0.

Results: Total obstetric admissions during the study period were 5,242; total referrals for obstetric indications were 1,678, constituting 32% of all obstetric admissions. 1241 (74%) of cases fall within the age group of 20-30 years, while 234 (14%) were under 20 years old and 201 (12%) were over 30 years. 588(35%) of patients were prim gravidas, 453(27%) were multi and 335(20%) were grand multigravidas. Fifty-six percent of patients presented during antenatal, while 604 (36%) arrived intrapartum and 302 (18%) in the postpartum period. The mode of transport used by the referred patients was an ambulance in 369(22%) and private vehicles in 1308(78%) cases. The most common reasons for obstetric referrals were hemorrhagic disorders, accounting for 28%, and hypertensive disorders, which made up 18%.

Conclusion: Complex obstetric cases are referred to our tertiary care facility. A proper referral system is needed for tertiary care-level hospitals. The process of transferring patients between hospitals highlights the importance of teamwork. It is necessary to acknowledge that tertiary care is the only option for high-risk patient referrals.

Keywords: Hemorrhagic Disorders, Hypertensive Disorders, Anemia, Caesarean Section, Eclampsia, Obstructed Labor

INTRODUCTION

A referral is defined as "a process whereby a health worker shifts the patient's care to another health professional, temporarily or permanently, to provide better diagnostic or therapeutic intervention, related to health care need of the patient" .[1] Referral services to recognize and refer to high-risk pregnancies are an important pillar of mother and child health care services. [2 In] most countries, this dimension of the health system remains undeveloped.[3]

[1] Khyber Teaching Hospital, Peshawar, Pakistan
[2] Al-Nafees Medical College and Hospital, Islamabad

Address for Correspondence
Dr. Zubaida Akhtar
Associate Professor Gynae C
Khyber Teaching Hospital, Peshawar, Pakistan
drzubaidakmc@gmail.com
+92 333 9156842

The referral system is an important component of a healthcare system that is of utmost importance in pregnancy and childbirth, as it provides essential care in life-threatening conditions.[4]

Looking at the past, anemia, hypertension, eclampsia, and bleeding diathesis leading to shock have killed millions of the antenatal population and are still leading causes of maternal mortality and morbidity.[8] Although there have been significant advances in the field of medical science and improving the quality of health in our country, the maternal mortality rate is still rising.[5]

Primary health care is deficient if it lacks appropriate and quick referral systems to secondary and tertiary care hospitals. Primary healthcare facilities are the backbone of the public health system in a country.[6] The three delays model states that pregnancy-related maternal deaths are increased due to delays in:

(1) Decision to look for suitable medical help for obstetric emergency

(2) Reaching an appropriate obstetric health center

(3) Receiving suitable treatment when a facility is reached.[7]

In most cases, the obstetrical journey will progress smoothly but unfortunately in a significant number of women pregnancy is complicated by medical disorders and obstetrical complications, endangering the lives of both mother and baby. Secondary health care is thought to be a cheap and convenient place with one-to-one care, given by nursing staff and dais (traditional birth attendants).

The secondary health care system is supposed to provide 24-hour labor room service, but unfortunately, district hospitals do not enjoy all of the above-mentioned facilities. The difficulty arises when a high-risk mother is identified and considered for referral to tertiary care. It is well known that identifying high risk cases and timely referral reduces maternal mortality and morbidity, as shown in an Indonesian study that 92 % of maternal deaths occur from delays in referral and case management, but majority can be treated if emergency obstetric care is provided in time.[8]

An audit of referred patients to tertiary care hospital can help in recognizing loopholes in management; needs assessment and areas that can be bridged to reduce the complications that are associated with the referred patient.

MATERIALS AND METHODS

This prospective observational study was conducted in the Gynae B unit of Khyber Teaching Hospital, Peshawar from 1st January 2020 to 31st December 2020. All obstetric cases referred to the Department of Obstetrics and Gynecology of Khyber Teaching Hospital, which is a tertiary care center in Peshawar were collected during the study period.

Ethical approval was obtained from the hospital ethical committee of Khyber Teaching Hospital (Ref. No.546/EC/KTH). The study data was collected from the case sheets of patients referred to and managed at our hospital. Detailed clinical history including age of the patient, parity, period of gestation if antenatal, place of referral, transport used by the patient, and reason for referral were recorded. A thorough general physical, abdominal, and obstetric examination was performed, and required investigations were sent. Management of the patient, whether delivered or put on conservative management, mode of delivery, and maternal outcome were documented.

Data was analyzed using SPSS 22.0. Frequency and percentages were calculated for variables like parity, period of pregnancy, transportation used, reasons for referral, and mode of delivery, whereas mean and standard deviation were calculated for age and period of gestation.

RESULTS

Total obstetric admissions during the study period were 5242, and total referrals done for obstetric reasons were 1678, which makes it 32% of all obstetric admissions.

Most of the cases in our study fall in the age group of 20-30 years, comprising 74% of the total cases, whereas 14% were less than 20 years age and 12% were more than 30 years age. The mean age of patients was 24 years whereas the standard deviation was 26.32$\pm$2.52 years. (Table no.1)

Most (35%) of patients were prim gravidas, 27% were multi and 20% were grand multigravidas. (Table no.2) 56% of the patients presented in the antenatal period, whereas 36% arrived in the intrapartum and 18% in the postpartum period. The mean period of gestation was 38+1.2 weeks (Table no. 3)

The mode of transport used by the referred patients was ambulance in 22% and private vehicles in 78% of cases.

Reasons for referrals are narrated in Table no. 4

Table 1: Distribution of cases according to age (n=1678)

Age	Frequency	Percentage
<20 years	234	14%
20-30 years	1241	74%
>30 years	201	12%
total	1678	100%

Table 2: Distribution of cases according to parity (n=1678)

Parity	Frequency	Percentage
Primigravida	588	35%
Multigravida	453	27%
Grandmultigravida	335	20%
Postnatal	302	18%

Table 3: Distribution of cases according to period of pregnancy (n=1678)

Period of pregnancy	Frequency	Percentage
Antepartum	772	46%
Intrapartum	604	36%
Postpartum	302	18%
Total	1678	100%

Table 4: Distribution of patients according to the causes of referral (n=1678)

	Causes of referral	Frequency	Percentage
Direct	Hemorrhagic disorders	470	28%
	Hypertensive disorders	302	18%
	Previous c/section	103	6%
	Fetal distress	67	4%
	Obstructed labor	40	2.3%
	CPD	23	1.4%
	Sepsis	13	0.8%
	Pulmonary embolism	3	0.2%
Indirect	Anemia	235	14%
	Cardiac	40	2.3%
	Hematologic disorder	13	0.7%
	Covid-19	13	0.7%
	Malaria/dengue	7	0.4%
	Jaundice	3	0.2%
Unindicated	OT not available	134	8%
	Blood not available	83	5%
	Obstetrician n/a	83	5%
	ICU not available	50	3%
Total		1678	100%

Table 5: Distribution of cases according to mode of delivery (n=1678)

Mode of delivery	Frequency	Percentage
Vaginal	303	18%
Caesarean	201	22%
Laparotomy	67	4%
Conservative(post lSCS, miscarriage , APH, PPH, preterm)	939	56%

DISCUSSION

Khyber Teaching Hospital is the main tertiary care hospital in Peshawar, and a large influx of referred patients is observed daily from the peripheral areas and small hospitals, both private and government sector, within the city. The referred patient is often regarded as un-booked and categorized as high-risk.[9]

74% of patients were in the 20-30 years age group in our study, Nagavarapu S et al in their

study at Gwalior reported that 87% of their patients were in this age group [10], whereas, in another study, 64% of patients of same age group were referred [11], concluding that this is the most vulnerable age group at risk.

35% of our cases were prim gravidas whereas 27% were multigravidas. In the study done by Qureshi RN et al in 2016, they reported that 50 % of their referred obstetric population was prim gravidas [12], whereas in another study done at New Delhi by Bharati K, 50% of their referred obstetric cases were multigravidas.[13]Postnatal population comprised of 18% cases in our study whereas this figure was 14% in another study [14].

In the present study, 18% of patients delivered vaginally, 22% had cesarean sections,56% were managed conservatively whereas 4% had laparotomy for ruptured ectopic, ruptured uterus, and torsion ovarian cyst. Contrary to ours,48% of patients delivered vaginally,28% delivered by cesarean, and 24% had conservative management in another study in Ghana which is a low-resource country.[15]Caesarean section rates were found to be as high as 55% in another study by Sorbye IK et al.[16]

46% of cases presented to us in the antenatal period, which is a major portion of our study population.30% of cases in another study were found to be antenatal, 11.36% of our study population presented in the intrapartum period with some complication of labour or fetal distress.56% of the obstetric referred population in another study presented in the intrapartum period [8], depicting a major lapse in care during labour and failure in anticipating labour complications.

Regarding the reasons for the referrals, most of our patients were referred for hemorrhagic and hypertensive disorders i.e., 46% of our study population were referred because of these two main reasons. Hemorrhagic disorders seen mainly in the form of antepartum and postpartum hemorrhage, was seen in 28% cases. In comparison to our study, hemorrhagic disorders were responsible for 13% referrals in another study, and 22% in a local study.[7]Hypertensive disorders was the second most common cause of obstetric referral in our study, comprising of 18% cases.25.13% cases were referred for hypertensive disorders in the form of pregnancy induced hypertension, preeclampsia, eclampsia, HELLP in a study conducted at Gwalior [11], whereas 17% were referred for the same indication in another research.[14]

Anemia was another common indication for which obstetric referrals were done, in 14% of cases.25% of cases were referred in another study for the indication of anemia [12], similarly 27.86% were found to be anemic and referred for the indication of anemia correction in the report by Bharati K et al.[13]

6% were referred for the indication of previous cesarean section in our study. An exact proportion of cases were referred for this indication in another study 15.8% of patients were referred for nonavailability of OT in our study, and 16.78% of patients were referred for this indication in a research in Central India.[13] The nonavailability of blood and obstetricians were responsible for the referral of 5% of cases each in our study, whereas they contributed to 3% and 4% of cases in another study.[14]

Our study had several limitations. First, it was a single-center study, and second, the duration could have been much longer. A multi-center study would have given a much broader view of obstetric referrals in a locality over a longer period.

CONCLUSION

It is concluded that a wide spectrum of complicated obstetric cases are referred to our tertiary care hospital. Hemorrhagic disorders, Hypertensive disorders, anemia, no availability of OTs, obstetricians, and blood, and previous cesarean sections are the few commonest causes of obstetric referrals apart from many others. Peripheral healthcare systems need to be strengthened, and the practice of early referral needs to be implemented.

DECLARATIONS

AUTHORS' CONTRIBUTIONS

Dr. Maimoona Qadir
Concept and Design, Data Collection, Analysis and Interpretation

Dr. Zubaida Akhtar
Drafting, Critical revision, Final approval

Dr. Farzana Niat
Data collection, interpretation and analysis

CONFLICT OF INTEREST

None

FUNDING

None

ACKNOWLEDGEMENTS

None

REFERENCES

1. Das S, Patil S, Pathak S, Chakravarthy S,Fernandez A, Pantvaidya S. Emergency obstetric referrals in public health facilities: A descriptive study from urban Maharashtra,India. Front Health Serv 2023;3(6):13-16.
2. Ameyaw EK, Amoah RM, Njue C, Nguyen TT.Audit of documentation accompanying referred maternity cases to a referral hospital in northern Ghana: a mixed methods study.BMC Health Services Research 2022;22(1):347-9
3. Devineni K, Sodumu N. A study of spectrum of referral pattern at atertiary teaching hospital towards better obstetric care. IAIM 2016; 3(8): 193-8.
4. Gupta PR, Chaudhari SN, Gonnade NV. Maternal and fetal outcome in referred patients to tertiary care centre. Sch J App Med Sci 2016; 4(5):1624- 31.
5. Goswami D, Makhija A. A study of high risk obstetrioc referrals to tertiary care hospital in Garhwal, Uttarkhand. IJSR 2015; 4(10): 546-50.
6. Ohn HT, Patrick DC, Zaw W, Mary K. Interhospital emergency obstetric referrals to the labor ward of RIPAS hospital Brunei. Int Med J 2011; 7(1): 22-33
7. Israr N. Referral System: A need of today. J Soc Obstet Gynaecol Pak 2019; 9(3): 113-4.
8. Ghardallou M, Limam M. Obstetric referrals to a tertiary care maternity : a descriptive study.Pan African Med J 2019;33:306
9. 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
10. Nagavarapu S, Shridhar V, Kilaru A.Reasons for obstetric referrals from community facilities to a tertiary care facility:A study from southern Karnataka. J Family Med Prim Care 2019;8(1):2378-83.
11. Prathiba P, Niranjan R, Kumar D,Lakshminarayanan S. Referral chain of patients with obstetric emergency from primary care to tertiary care: A gap analysis. J Family Med Prim Care 2020;9(1):347-353
12. Qureshi RN, Sikandar R,Hoodbhouy Z,Bano R,Jabeen N. Referral pattern of emergencies in obstetrics: Implications for defining scope of services and policy.JPMA 2016;66(12):154-158
13. Bharati K, Kumar B, Bharati S. Obsteric referral patern in atertiary care centre: A prospective observational study. Eur J Mol Clin Med 2020; 7(10): 4024-4028
14. Goswami P, Bindal J, Chig N. To study pattern of obstetric cases referred at tertiary care centre in Central India. IJRCOG 2017;6(6):2370-2374
15. Daniels AA, Abousi A. Improving emergency obstetric referral systems in low and middle income countries: a qualitative study in a tertiary health care facility in Ghana.BMC Health Services Research 2020;32(4):23-27
16. Sorbye IK,Vangen S,Oneko O,Sundby J. BMC Pregnancy and Childbirth.Caesarean section among referred and self referred birthing women: a cohort study from a tertiary care hospital,northeastern Tanzania 2011;11(55):1-10
17. Singh S, Doyle P, Campbell OMR,Murthy GVS. Management and referral for high risk conditions and complications during the antenatal period: Knowledge,attitude and practice survey of providers in rural public healthcare in two states of India reproductive health. Rep Health J 2019;16(3):101-105