

## Original Article

## A Study of obstetric referrals-one year experience at a tertiary care centre in West Bengal

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### Abstract

**Background:** Referral of high risk antenatal mothers plays a pivotal role especially in a developing country like India, to reduce the fetomaternal mortality. **Methods:** A prospective observational study was conducted in Medical College and Hospital, Kolkata from 1st May 2014 to 30th April 2015 to include 100 obstetric referral cases which required admission. **Results:** 47% were in the age group of 20-25 years (mean age: 23 years). Majority of patients (57%, n=57) were primigravidas and came from rural areas (77%, n=77). 70% (n=70) of study population did not have any prior antenatal checkup. 34% (n=34) of total referrals were from state govt. hospitals of neighbouring districts followed by 27% (n=27) from rural hospitals. Most of the referred patients were in labour at the time of referral (87%, n=87). 40.2% presented with medical/obstetric complications. The most common indication for referral was patients with previous caesarean section (23%, n=23), PROM/PPROM (15%, n=15), medical disorders complicating pregnancy (8%, n=8). 69% of referred patients required surgical management in the form of LSCS (61%, n=61) and instrumental deliveries (8%, n=8). There was one maternal mortality. Perinatal mortality rate was found to be 11.2% (n=12). **Conclusion:** 56% (n=56) of referrals to our hospital were unjustified, emphasizing the need for development of strict referral protocols.

**KEYWORDS:** Referrals, Obstetric, Tertiary

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This article may be cited as: Narsaria K, Mukhopadhyay P, Kyal A, Agarwal K, Agarwal A and Sanghi S. A Study of obstetric referrals-one year experience at a tertiary care centre in West Bengal. HECS Int J Com Health and Med Res 2017;3(3):32-36

### INTRODUCTION

The purpose of antenatal care is to identify 'High Risk' cases as early as possible from a large group of antenatal mothers, and arrange for them, timely and appropriate skilled care. This is where referral system plays a pivotal role. Especially in a developing country like India, where majority of the population lives in rural areas, lacking access to essential obstetric facilities, timely referral and intervention of high risk pregnancies can reduce fetomaternal morbidity and mortality whereas unnecessary referrals increase workload on tertiary hospitals and also cause discomfort to pregnant women and relatives. The objective of the study was to review the reasons for referral and patterns of

obstetric cases referred to our hospital, to study the clinical course and management of women during the hospital stay and to study the maternal and perinatal outcomes.

### MATERIAL AND METHODS

This study was conducted at Gynaecology & Obstetrics department of Medical College & Hospital, Kolkata from 1<sup>st</sup> May 2014 to 30<sup>th</sup> April 2015 after attaining institutional ethical clearance. It was a prospective observational study. All pregnant and postpartum women within 6 weeks women who reported to the obstetric emergency during the study period were enrolled in the study. We did analysis of 100 such cases and information was recorded on a

detailed proforma. History, physical, obstetric and postpartum examination was done. Routine investigations, fetal/maternal outcomes were recorded in a predefined proforma after consent from patient or attendants. Those cases that required admission and immediate management were taken. Data entry and analysis were done using percentage, frequency and descriptive statistical tests.

## RESULT

47% were in the age group of 20-25 years

**Table 1: Type Of Referring Hospitals (N= 100)**

TYPE OF HOSPITALS	NO. OF PATIENTS	%
state general hospital (sg hospital)	34	34
district hospital (sadar)	8	8
sub-divisional hospital (sd hospital)	15	15
rural hospital (rh)	27	27
block primary health centre (bphc)	5	5
primary health hospital (phc)	1	1
private hospitals	9	9
esi	1	1

(mean age: 23 years). Majority of patients (57%, n=57) were primigravidas and came from rural areas (77%, n=77). 70% (n=70) of study population did not have any prior antenatal checkup and visited the referral centre for the first time. In our study, 34% (n=34) of total referrals were from state govt. hospitals of neighboring districts followed by 27% (n=27) from rural hospitals (Table 1). Most of the referred patients were in labour at the time of referral (87%, n=87) whereas only 13% (n=13) of referred patients were antepartum. 35 out of 87 intrapartum referrals (40.2%) presented with medical/obstetric complications (Table 2). The most common indication for referral was patients with previous caesarean section (23%, n=23), PROM/PPROM (15%, n=15), medical disorders complicating pregnancy (8%, n=8). Other important reasons for referral were hypertensive

disorder of pregnancy (HDP) (9%, n=9), APH (6%, n=6) and obstructed labour (5%, n=5) (Table 3). It was seen that 56% (n=56) of referrals to our hospital were unjustified. 69% of referred patients required surgical management in the form of LSCS (61%, n=61) and instrumental deliveries (8%, n=8). 15% (n=15) of total patients required transfusion of blood, blood products. Out of 100 patients, only 2 underwent subtotal hysterectomy (Table 4). There was one mortality among the referred patients due to acute renal failure (ARF) following lower segment caesarean section (LSCS) for severe preeclampsia with abruptio-placenta. Of a total of 107 births, there were 5 stillbirths (4.7%). Among 102 (95.3%) live births, 88.8% (n=95) survived,

**Table 2: Time Of Referral**

ANTEPARTUM	no. of patients (n=13) %	INTRAPARTUM	no. of patients (n=87) /%
without complication	8/61.5%	without complication	52/59.7%
with complication	5/38.4%	with complication	35/40.2%

14 of which required SNCU management and

**Table 3: Indications Of Referrals (N=100)**

post caesarean	with scar tenderness	7
	at term/aph/prom/in labour	16
PROM		10
PPROM		5
postdated		6
APH		6
HDP		9
obstructed labour		5
preterm labour		5
twin		5
oligohydramnios		4
non progress of labour		4
no fetal movement (fetal distress)		4
GDM		3
jaundice		3

CPD	3
heart disease	2
IUGR	2
breech	1

**Table 4: Mode Of Delivery (N=100)**

MODE OF DELIVERY	NO. OF PATIENTS (N = 100)	(%)
<b>vaginal</b> spontaneous	31	31
forceps	7	7
ventouse	1	1
<b>LSCS</b>	61	61

**Table 5: Fetal Outcome (N=107)**

FETAL OUTCOME	NO OF BABIES (N=107)	(%)	NO. OF BABIES	(%)	
live births	102	95.3 %	survivors	95	88.8 %
			non survivors	7	6.5 %
stillbirths	5	4.7 %	stillbirths	5	4.7 %

## DISCUSSION

In our study, the most frequent age group referred to our hospital was between 20 to 25 years (47% of total patients) with mean age being 23 years. In a similar study, 35–40-year age group (30%) was common at the faith-based hospital, Tokomere.<sup>2</sup> Similar results were seen in a study conducted in Africa where the mean age was 24.1 years.<sup>3</sup> In another study done in Gujarat the average age of women referred was

23.46±4.1 years.<sup>4</sup> Similarly 21-24 years was the most frequent age group referred at Fatima Memorial Hospital, Lahore.<sup>5</sup> Majority of referred cases (57%) were nulliparous and 43 % were multiparous. In a similar cross sectional study conducted in Uganda the majority of referred cases were primigravidas, with little or no formal education.<sup>6</sup> In another study done in referred pregnant patient in Gutu district, Zimbabwe most of the referred patients were nulliparous and younger than 20 years.<sup>7</sup> In a similar study conducted at Lahore it was seen that out of hundred patients in study group who were referred after trial of labour 65% were primigravida and 35% were multigravida.<sup>6</sup> 77% of study population lived in rural areas and only 23% lived in urban areas which is similar to study by Wahane et al where 95.65% women came from rural areas & only 4.34% came from urban areas.<sup>8</sup> This higher incidence of rural patients may be due to delay in seeking care owing to ignoring of warning signs due to lack of awareness compounded by poor transport facilities. Only 30% of patients were booked cases which is comparable with another local study in Lahore where 90% of patients never had any antenatal check-up. Similarly 80 - 85% referred cases were found unbooked in a study in Fatima Memorial Hospital, Lahore.<sup>5</sup> In another study, 39.7%(n=104) were booked while 60.3%(n=158) were unbooked.<sup>9</sup> In India, the Reproductive and Child Health Programme aims at providing at least three antenatal visits. As per NFHS-3, in India, 52% of women had taken 3 or more antenatal visits.<sup>10</sup> Data from Gujarat reveals, one visit was made by 86.7% and three or more visits by 67.5% of women.<sup>4</sup> In India, 98% of women with 12 or more years of education received antenatal care, compared with 62 % of women with no education. The percentage of mothers who received antenatal care from a doctor increases sharply with education, from 29 % for women with no education to 88 % for women who have completed 12 years of education or more.<sup>10</sup> Most of patients were referred from state general hospitals (34%) and rural hospitals (27%) of various neighbouring districts indicating that major burden of referrals are from rural India. 87 % of the patients referred were in labour at the time of referral and 40.2% (n=35) of these presented with medical/obstetric complications and 38.4% of antepartum referrals presented with medical/obstetric complications. In a similar observational study conducted in Gujarat out of the 155 referrals, most common

referral was during the intra-partum period similar to our study. Intra natal referral was done in 100 (64.5%) cases.<sup>4</sup>In a population-based cohort study to determine the prevalence of antenatal and intra-partum referrals, Gutu district, Zimbabwe a total of 30% of women (3,094/10,572) had an antenatal referral in contrast to 70% intranatal referrals.<sup>7</sup>In the present study, most of the referrals were cases of previous caesarean section (23%) followed by PPROM/PROM (15%) whereas in a similar study conducted in Gujarat the most frequent indication of referral was non-progressive labour (23%) and previous caesarean section accounted for only 6% of all referrals.<sup>4</sup>In another study by Ohn et al, pre-eclampsia (18.5%) followed by premature labour (14.1%) were the most common causes of referral.<sup>11</sup>These differences could be because the study was conducted in PHC from where the patients are referred to higher institutions with above indications. In this study it was seen that 56% of referrals to our hospital were unjustified. Unjustified because these cases could have been treated at peripheral health unit without special treatment and have been incorrectly referred to our hospital. 61 % of the referred patients underwent emergency LSCS whereas 39% had vaginal delivery which is similar to a study conducted by Ambreen et al.<sup>5</sup> where 62% of referred cases underwent caesarean section. In another similar study, 53.5% of parturients underwent Caesarean section followed by instrumental vaginal deliveries (Forceps and Vacuum extraction) in 16% of cases and spontaneous vaginal delivery in 14% cases.<sup>12</sup>

20.59%(n=21) of babies required management in NICU immediately after birth which is consistent with 26.5% neonates transferred to NICU in a similar study conducted in Karachi.<sup>12</sup>4.7%(n=5) of all births was stillbirth and 95.3%(n=102) live births. The perinatal mortality rate in my study was found to be 11.2 in contrast to 41% of study conducted in Karachi.<sup>12</sup> The traditional birth attendants in India (Dais) are untrained and sometimes unaware of the problems encountered during pregnancy and labour. So they bring the patient in hospital very late and usually in serious condition. Bichile et al<sup>13</sup> studied obstetric problems in rural areas. They observed late referrals in cases of obstructed labour, abnormal presentations, toxemia and inadequate transport

facilities to apex hospital. Shelat et al<sup>14</sup> in their study concluded that emergency cases were exposed to the highest risk of maternal and perinatal complications. Illiteracy, poor nutrition, improper referral system and lack of transport are all contributory factors to high maternal mortality.

## CONCLUSION

56% of referrals were unjustified in our study. Timely referrals with detailed referral slips imparting information regarding treatment received at the referring hospital might help in early and optimal intervention so as to reduce maternal and perinatal mortality. Moreover, a structured referral system would help both patient and doctor in providing essential lifesaving care.

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**Conflict of Interest: None**

**Source of Support: None**

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