Original Research Article

Referrals revisited: a clinical audit

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ABSTRACT

Background: Pregnancy and childbirth are physiological processes; however, severe maternal morbidity can complicate certain pregnancies, deliveries and puerperium. To prevent maternal/ neonatal morbidity and mortality, the high-risk category needs timely identification and intervention and if required, prompt referral to higher centres where HDU/ICU level of care is provided. The present study was a clinical audit of obstetric referrals.
Methods: A clinical audit of all obstetrics referrals done at BJRM (secondary level facility) from 1st May to 31st October 2016. The cases were analysed with respect to demographics, indications for referral and barrier to services.
Results: Referral rate of our hospital was 6.52%. Mean age of women referred was 24.16 years. The associated risk factors were PIH in 36.17%, anaemia in 34.04%, followed by thrombocytopenia and diabetes in pregnancy. Majority of referrals were done in women during labour 93.94% while only 3.03% referrals during post-partum period. Most common indication was MSL with foetal distress 20.96%, followed by hypertensive disorders in pregnancy 16.93%. Other indications were APH, malpresentation, 2nd stage arrest and cord prolapse. The main barriers to providing services at our institute were unavailability of 24 hours OT services, blood bank and ICU care.
Conclusions: Standard referral protocol and well-defined linkages need to be established so as to have better co-ordination between the referral units and tertiary centres.

Keywords: Barrier in referral service, High risk pregnancy, Obstetric referral, Referral protocol

INTRODUCTION

Pregnancy and childbirth are physiological processes; however, severe maternal morbidity can complicate certain pregnancies, deliveries and puerperium. Approximately 30% of such obstetric cases belong to this high-risk category which collectively accounts for 70-80% of maternal and perinatal morbidity and mortality.[1]

According to WHO, in comparison to a developed country, a woman in a developing country is at 33 times higher risk of dying from obstetrical causes, in her lifetime.[2] UNICEF data estimates that about 800 women die every day due to preventable obstetric causes and 20 per cent of these women belong to India. India's share of global maternal deaths is 17%, with 55,000 women dying of preventable obstetric causes annually.[3,4]

Maternal Mortality Ratio (MMR) reflects the overall health care system of the society and their attitude towards women. India has failed to achieve the Millennium Development Goal (MDG) of decreasing the MMR by 75% by the year 2015 as compared to the year 2010, as reflected in MMR, which reduced from 215 in 2010 to 174 in 2015.[3,4]

To prevent maternal/neonatal mortality, the high-risk category needs timely identification and intervention and if need be, prompt referral to higher centres where HDU/ICU level of care is provided. The health care system needs to be ready to manage such high-risk cases with a positive outcome. In our country, healthcare is provided at primary, secondary and tertiary level; therefore, a strong, structured referral system assumes prime importance in meeting this challenge.

The present study was done to analyse the indications for referral and barriers in providing optimal obstetric care at district level hospitals.

METHODS

A clinical audit of all obstetrics referrals was done at Babu Jagjiwan Ram Memorial hospital (BJRM), Delhi (a secondary level facility) from 1st May to 31st October 2016 over a period of 6 months. It was a prospective, proforma based observational study where data from 132 cases was collected.

All pregnant women who were referred to tertiary hospital from our institute (Labour room and ANC OPD) during the study period were included and analysed using a proforma. All pregnant women with age less than 20 year and more than 35 years were taken as high-risk age group. Those pregnant women that were seen at BJRM hospital outside the study period, or referred from outside or those who requested to continue to be seen at BJRM Hospital due to other reasons were excluded.

The proforma was designed to include maternal demographics like age, gravidity, period of gestation at presentation and associated medical conditions. Salient features in history and examination were noted and baseline and specific investigations including ultrasonography were recorded. A note was also made of indications for referral, whether the reference was ante/intra/post-partum, date and time interval between admission and referral and pre-referral treatment. Barriers for providing optimal obstetric care at our institution were also recorded. Data entry and analysis were done in MS excel.

RESULTS

A total of 2023 obstetrics cases were admitted in labour room of BJRM hospital during the study period. Out of this,132 cases were referred, thus making the referral rate as 6.52%.

Mean age of women referred was 24.16 years. In this category, 9 (6.81%) women belonged to the high-risk age group, out of which 7 (5.30%) women were less than 20 years of age and 2 (1.51%) women were more than 35 years (Table 1).

Parity of women influences the state of current pregnancy and in the present study, there were 77 (58.33%) primipara and 55 (41.66%) multipara (Table 1).

Out of the 132 referrals, 106 (80.30%) cases were referred at term, 3 (2.27%) cases were referred at less than 28 weeks period of gestation (POG), of which, 2 cases were of eclampsia and 1 case was ruptured gravid horn of bicornuate uterus in shock and 3 (2.27%) women were of less than 20 weeks POG, which were referred for ruptured ectopic pregnancy (Table 1).

Table 1: Maternal demographics.

Age	No. (n=132)	%
≤20	23	17.42
21-25	75	56.82
26-30	28	21.21
31-35	04	04.55
>35	02	01.51
Gravida	**No. (n=132)**	**%**
P0	77	58.33
P1	34	25.76
P2	15	11.36
P3	3	02.27
P4	3	02.27
Associated medical disorders	**No. (n=132)**	**%**
Anaemia (moderate and severe)	16	34.04
HTN/PIH	17	36.17
Thrombocytopenia	4	08.51
Hypothyroidism	2	04.26
Diabetes	2	04.26
Fever	5	10.64
IHCP	1	02.12
POG (weeks)	**No. (n=132)**	**%**
≤20	3	02.27
20+1 - 27+6	3	02.27
28 - 36+6	20	15.15
37-40	69	52.27
>40	37	28.03

Table 2: Indications for referral.

Indication	No. of cases N=132	Percentage
Intra partum	124 (n=124)	93.94
MSL+FD	26	20.96
FD	14	11.29
Thick MSL in early labour	11	8.87
Malpresentation	13	10.48
-Breech	11	8.87
Mentoposterior	2	1.61
Severe PE/ HELLP/ impending eclampsia/ eclampsia	21	16.93
Arrest of 2nd stage	8	6.45
Protracted labour	15	12.10
Abruption	7	5.65
Cord prolapse	5	4.03
Thrombocytopenia	4	3.23
Antepartum	4	3.03
Ectopic	3	75
Ruptured gravid horn of Bicornuae uterus	1	25
Post-partum	4	3.03
Atonic PPH	2	50
Traumatic PPH	1	25
Severe Anemia+TCP	1	25

Out of the 132 cases, most of the referrals were intrapartum 124 (93.94%) and 4 (3.03%) women each were referred during antepartum and postpartum period.

The common indication for referral during intrapartum period was meconium stained liquor (MSL) with foetal distress (FD) 26 (20.96%), hypertensive disorders of pregnancy 21 (16.93%), protracted labour 15 (12.10%), foetal distress 14 (11.29%), malpresentation 13 (10.48%), thick MSL in early labour 11 (8.87%), arrest of 2nd stage 8 (6.45%), abruption 7 (5.65%), cord prolapse 5(4.03%) and thrombocytopenia 4 (3.23%). A total of 4 (3.03%) women were referred during postpartum period, out of which 2 (50%) cases were of atonic post-partum haemorrhage (PPH) and 1 (25%) case each of traumatic PPH and postnatal severe anaemia with thrombocytopenia. Antepartum referral cases included 3 (75%) cases of ruptured ectopic pregnancy and 1 (25%) case of ruptured gravid horn of bicornuate uterus in shock (Table 2).

Most of the patients 59 (44.69%), were referred within 6-12 hours from the time of admission while 17 (12.87%) women were referred after 12 hours, and 16 (12.12%) referrals were done after 24 hours (Table 3).

Table 3: Time interval between admission and referral.

Time interval (TOA-TOR)	Number of cases (n=132)	Percentage
<6 hours	40	3.30
6-12 hours	59	44.69
12-24 hours	17	12.87
>1 day	16	12.12

In the present study, the most common barrier to dispense optimal emergency obstetric care was unavailability of emergency OT services in 82.57%, followed by unavailability of blood bank in 19.69% cases, lack of ICU care in 8.33% cases and lack of NICU care in 6.06% cases (Table 4).

Table 4: Barriers to optimal care.

Barriers to optimal obstetric care	No. of cases (n=132)	Percentage
Blood bank	26	19.69
EMOT	109	82.57
ICU Care	11	8.33
NICU Care	8	6.06

DISCUSSION

Maternal and neonatal outcomes can be improved significantly if barriers to optimal emergency obstetric services can be removed. Most of the load of providing obstetric care in our country is taken up by the peripheral hospitals. But as these institutions lack in terms of human resources and infrastructure, so patients at times need to be referred to higher centers.

Referral rate of our institution was 6.52% during the study period, which is similar to a study done by Siraj et al (4.47%).[5] Referral rate was found to be slightly higher 15.2% in the study done by Patel et al which was done at a PHC and 35% in the study done by Bhopal SS et al whereas Khatoon A et al found a much higher rate of 40% in her study.[6-8]

Out of 132 cases referred in this study, the mean age of patient was 24.16 years. There were 9 (14.39%) patients who belonged to high risk age group (7 women were adolescent and 2 women were aged >35 years). Sirajet al found the mean age to be 27±5 years, which is higher than our study population.[5] This can be due to socio-economic and cultural factors with prevalence of marriage at an early age in our study area.

77 (58.33%) primigravida and 55 (41.66%) multigravida patients were referred in this study group. Referral rate was slightly higher for primigravida. Similar rates were seen in the study of Khatoon A et al.[8]

In the present study most of the referrals 124 (93.94%) were during intrapartum period, followed by antepartum and postpartum period, 4 (3.03%) women in each group. In the study done by Khatoon et al antepartum referral cases were 10% and intrapartum were 69%.[8] Patel HC et al study found that majority of referrals were during antenatal period (64.5%), followed by intranatal (23.9%) and postnatal period (11.6%).[5] Intrapartum referrals were high in the present study as our institution lacks emergency OT services/ICU/HDU and blood bank, whereas antepartum referrals were less as high risk factors were timely identified in antenatal OPD in majority of cases and such patients were managed and referred on OPD basis.

In the present study, the most common cause of referral was MSL with fetal distress in 26 (20.96%) cases, followed by hypertensive disorders of pregnancy in 21 (16.93%) women, protracted labour in 15 (12.10%) women, fetal distress in 14 (11.2%), malpresentation in 13 (10.48%) women and PPH in 3 women (2.47%). Similar results were seen in the study done by Khatoon A et al, where common reasons for referral were MSL (78%), followed by hypertensive disorders of pregnancy (27%), protracted labour (20%) and PPH (2%).[8] Qureshi et al found PIH (32.3%) as the most common cause of referral.[9] In yet another study done by Chaturvedi S et al, protracted labour (38%) was the most common cause of referral, followed by PIH (7.2%), PPH (7.8%) and MSL (2.8%).[10]

Most of our patients 59 (44.69%) were referred within 6-12 hours of admission, 40 (3.03%) were referred within 6 hours, while 16 (12.12%) were referred after more than 24 hours. This is because majority of the patients were in labour and early identification of complications and timely referral was emphasized upon. Patients who were referred after 12-24 hours were the ones where antepartum care in the form of steroid cover, building up of hemoglobin in moderate to severely anemic patients,

control of high BP and stabilization of patients was done. In the study done by Khatoon et al, majority of women reached tertiary care centers within 6-12 hours of referral, 52% took 12-24 hours and yet 8% of patients took more than a day.[8]

In the present study, the most common barrier to dispense optimal emergency obstetric care was unavailability of emergency OT services in 82.57%, followed by unavailability of blood bank in 19.69% cases, lack of ICU care in 8.33% cases and lack of NICU care in 6.06% cases, with the same patient requiring multiple interventions in many cases. In the study by Maskey S et al, 51.79% of referred cases required surgical intervention, 18.75% cases needed ICU care and 25.89% women were transfused blood/ blood products.[11]

CONCLUSION

Emergency obstetric care has evolved into HDU (high dependency unit) and obstetric ICU level of care at tertiary level hospitals leaving secondary level hospitals with an urgent need to upgrade with respect to manpower and infrastructure as they serve as the point of first contact with the patient. Infrastructure development in terms of emergency OT services and blood bank at district level hospitals can go a long way in improving maternal/neonatal outcomes and in decreasing the workload on the already overwhelmed tertiary care centres. Also, to bridge the gap between peripheral and tertiary centres, it is essential to have structured referral linkages in place so that the peripheral hospitals can make timely referrals of women in need of specialised care.

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