Original Research Article

A study of spectrum of referral pattern at a tertiary teaching hospital towards better obstetric care

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Abstract

Background: 22% of the population are constituted by women of child bearing age of 15-45 years in India. They are a vulnerable risk group which is due to pregnancy and child bearing. For providing access to essential obstetric care, the referral system is an essential component of any health systems which are important in pregnancy and child birth.

Aim: This study was done to review the pattern of obstetric cases referred and to identify the clinical course, mode of management, maternal and perinatal outcomes.

Materials and methods: This prospective observational study reviewed 100 obstetric cases. Thorough history was taken; complete physical and obstetric examination and relevant investigations were done. Management of the patient, clinical course, mode of delivery, both maternal and perinatal outcomes were documented.

Results: Most common diagnosis at referral was medical disorders complicating pregnancy (45%) among which hypertensive disorders accounted for 34%, followed by severe anemia (17%). Twenty-one percent of the patients were in serious or critical condition on arrival, 29% patients required surgical intervention, 19% received intensive care management and there were no mortalities. Total number of live births were 73 (78.5%) among which 28 (30%) required neonatal admission and 5 (5.3%) had early neonatal death. Vaginal delivery rate was 78% in spite of high risk conditions and various complications. Only 30% had the required three visits and 18% had a delay ranging from 3hrs to 18 hours to reach the referral centre.

Conclusion: Most common diagnosis at the time of referral was hypertensive disorders of pregnancy and its various presentations like eclampsia, HELLP, DIC, Abruption. There is still scope for

improving antenatal care, reduce 1st delay, 2nd delay and need to strengthen FRU and emergency obstetric care centres at some of the districts.

Key words

Referral centers, Eclampsia, Obstetric care.

Introduction

22% of the population are constituted by women of child bearing age of 15-45 years in India. They are a vulnerable risk group which is due to pregnancy and child bearing. Pregnancy and child birth are physiological processes and a woman is the only person who can come across a number of health related problems when pregnant and it can also lead to death [1, 2]. All these deaths occur in the developing countries where integrated health care system are not well organised. Developing countries of Asia and Africa have the highest mortality rate i.e. 99% of total maternal mortality. The key factors contributing the adverse maternal and perinatal outcomes are lack of trained birth attendants, lack of education, low status of women in society, poor families, financial dependency of women, and delay in seeking medical treatment [3]. A study showed that 92% of maternal deaths are due to delay in referral and case management, first delay in making decision to seek care , 2nd delay is due to delay in identifying and reaching a medical facility, 3rd delay is due to delay in receiving adequate and prompt treatment even after reaching a care institution [4, 5]. For providing access to essential obstetric care, the referral system is an essential component of any health systems which are important in pregnancy and child birth. This study was done to review the primary reasons and pattern of obstetric cases referred to Modern Government Maternity Teaching Hospital, Osmania Medical College and to identify the clinical course, mode of management, maternal and perinatal outcomes.

Materials and methods

It was a prospective observational study reviewed 100 obstetric cases referred from various centers, ranging from a distance of 30 to 300 km from Hyderabad, Telangana in a 3 month period from January 2016 to March 2016.Thorough history was taken; complete physical and obstetric examination and relevant investigations were done. Management of the patient, clinical course, mode of delivery, both maternal and perinatal outcomes were documented. The time taken to reach the referral centre that is the 2nd delay, the gestational age at which 1st antenatal visit was documented and the number of antenatal visits also was studied. This study data was collected from case sheets of the patients referred and managed at tertiary care. Demographic data of the patients and the reasons for referral and whether the referral was antepartum or intra partum was noted and whether conservative or intervention management was also noted. The maternal outcome was studied in terms of mortality and need for blood transfusions and post partum complications.

Results

It was a prospective observational study reviewed 100 pregnant women referred from various centers in a 3 month period analysed. Duration and health care center approached by patients was as per **Table – 1**. Details of patients in study were as per **Table – 2**.

Table – 1: Duration and health care center approached by patients.

Duration	**No. of patients**	**%**
Ante partum	30	30
Intra partum	50	50
Post Partum	20	20
Source		
Dai	43	43
Primary health care units	27	27
Secondary health care units	30	30

Table - 2: Details of patients in study.

Age (Years)	
15-20	23
21-25	58
26-30	15
>30	4
Literacy level	
Literate	60
Illiterate	40
Number of visits	
1	17
2	18
3	35
4	20
5 and above	10
Time taken to reach to referral center (Hours)	
</=1	29+10=39
2	12
3	4
4	5
5	3
6	3
24	3
Treatment given	
Emergency LSCS	24
Abortion	1
Hysterotomy	1
Vaginal	74

Most common diagnosis at referral was medical disorders complicating pregnancy (45%) among which hypertensive disorders accounted for 34%, followed by severe anemia (17%) (**Table – 3**). Twenty-one percent of the patients were in serious or critical condition on arrival, 29% patients required surgical intervention, 19% received intensive care management and there were no mortalities.

Total number of live births were 73 (78.5%) among which 28 (30%) required neonatal admission and 5 (5.3%) had early neonatal death (**Table – 4**). Vaginal delivery rate was 78% in spite of high risk conditions and various complications. Only 30% had the required three visits and 18% had a delay ranging from 3hrs to 18 hours to reach the referral centre.18 women required critical HDU care and catergorised under Maternal Near Miss (MNM). 12 out of 18 are – preeclampsia/eclampsia related. 4 were hemorrhage related (ectopic, rupture, placenta accrete, sec PPH) in shock. 2 had Peripartum Cardiomyopathy, One patient with placenta accrete , rupture uterus required 30 units of blood and components, ventilator care ,inotropic support, emergency hysterectomy and internal iliac artery ligation. One patient required ventilator supports for acute pulmonary edema, 11 patients required massive multiple transfusions. 9 women had presented with severe shock due to abruption, rupture, APH, ruptured ectopic, 5 women had DIC, one woman had emergency hysterectomy due to secondary pph., another for rupture uterus (total - 3), four had oliguria either due to shock, DIC or abruption, five women required inotropic support, four women required mechanical ventilation and one required dialysis.

Table – 3: Diagnosis at referral centers.

Diagnosis	**Number of patients**
Preeclampsia/ Gestational HTN/ Eclampsia/ HELLP	12+10+11+2=34
PTL preterm labour	6
IUGR	6
IUFD	7
Abruption, Placenta previa	8
Jaundice	1
Ectopic	3
Severe Anemia	11
Heart Disease	1
PROM	8
Breech	2
Post Dated	3
Oligo	3
Poly Hydramnios	2
Hypothyroidism	1
Meconium stained liquor, Fetal Distress	5
Molar Pregnancy	1

Table - 4: Perinatal outcome.

	No. of patients	%
Total live births	73	78.5
Neonatal admission	28	30
Early neonatal death	5	5.3

Discussion

In present observational study reviewed 100 pregnant women referred from various centers in a 3 month period most common diagnosis at referral was medical disorders complicating pregnancy (45%) among which hypertensive disorders accounted for 34%, followed by severe anemia (17%). Twenty-one percent of the patients were in serious or critical condition on arrival, 29% patients required surgical intervention, 19% received intensive care management and there were no mortalities. Total number of live births were 73 (78.5%) among which 28 (30%) required neonatal admission and 5 (5.3%) had early neonatal death. Vaginal delivery rate was 78% inspite of high risk conditions and various complications. Only 30% had the required three visits and 18% had a delay ranging from 3hrs to 18 hours to reach the referral centre. Many studies were conducted related to study of referral pattern at a tertiary health care centre. Maskey S, et al. [6], conducted a prospective observational study reviewed 112 obstetric cases referred from various centers. Thorough history was taken; complete physical and obstetric examination and relevant investigations were done. Management of the patient, clinical course, mode of delivery, both maternal and perinatal outcomes were documented**.** The results were that most common diagnosis at referral was medical disorders complicating pregnancy (38%) among which cardiac disease accounted for 20%, followed by hypertensive disorder (17%). Unavailability of perinatal facility was the most frequent reason (24%) for referral. Twenty seven percent of the patients were in serious or critical condition on arrival, 52% patients required surgical intervention, 19% received intensive care management and there were mortalities of 2 women (1.8%). Total number of live births were 70 (62.5%) among which 28 (42%) required neonatal admission and 3 (4% of live birth) had early neonatal death. This study concluded that wide spectrum of complicated obstetric cases were referred to this hospital. Unavailability of perinatal facility was the most common reason for referral followed by unavailability of physician. Most common diagnosis at the time of referral was medical disorders complicating pregnancy.

Divya Goswami, et al. [7], conducted to know the maternal and foetal outcomes in women referred to a tertiary care centre. Data was collected for 154 cases referred to the tertiary health centre in 2014, which included the demographic characteristics, reasons for referral, high risk factors, intervention done and the maternal and fetal outcomes. It was found that the majority of the cases were referred from Dehradun district followed by Garhwal region. Most of the patients were referred in the ante-partum and intrapartum period. Sixty seven patients needed surgical intervention. The average hospital stay was 7.37 days. Nineteen patients needed ICU admission with an average stay was 4.26 days. There was no maternal mortality, however out of 115 total births, there were 23 still births and 27 births with 1 minute Apgar score <7.

Rathi Charu, et al. [8], conducted a prospective observational study, comprising the first 100 referred obstetric cases. Complete history, basic investigations and specific investigations as required were carried out for each case. Mode of delivery was documented, maternal complications if any, were managed and maternal and perinatal outcome was documented. The results were that 67% of the referrals were from urban areas and 33% from rural areas. Educational status of the urban patients was markedly better than the rural patients. Majority of referrals were for hypertensive disorders (26%) and preterm labour (26%). 60% of the rural population was anaemic. 62% of

the total live borns required nursery care. The current study shows that delay in referral and referral to intermediary centres are the main causes for adverse maternal/perinatal outcome. Peripheral healthcare system needs to be strengthened and practice of early referral needs to be implemented for better maternal and perinatal outcome.

Ayesha Khatoon, et al. [9], conducted a prospective observational study in Obstetrics and gynaecology unit III, Abbasi Shaheed Hospital, Karachi during period of 1st July 2010 to 31st Dec 2010. 234 patients referred to our unit in emergency were included in our study. A detailed proforma, including history and examination, Investigations, source and reasons for referral, mode of delivery, maternal outcome, perinatal out-come, maternal complications and their management. The results were a total number of 234 obstetric patients were referred to Gynae Unit III during our study period. 35% of cases were referred from Dai's, 27% from Primary health care units and 41% from Secondary care hospitals. Patients were referred in Antenatal period were 21%, 69% in intrapartum period while only 10% in post partum period. Most common reasons for referral prolonged labour, fetal distress, repeat Cesarean section and meconium stained liquor, respectively [10]. Maternal outcome was 97% and fetal outcome was 87% in total. This study concluded that referral rates to tertiary care center are rising continuously. Repeat Caesarean Section and meconium stained liquour, are the top most reasons. Delay in referral is a big contributory factor for adverse maternal and perinatal outcomes. There is an urgent need of provision of 24 hours emergency Obstetric care system with alert transportation readily avail-able to women in need.

Conclusion

Wide spectrum of complicated obstetric cases was referred to this hospital. Most common diagnosis at the time of referral was hypertensive disorders of pregnancy and its various presentations like eclampsia, HELLP, DIC, Abruption. There is still scope for improving antenatal care reduces its delay, 2nd delay and need to strengthen FRU and emergency obstetric care centres at some of the districts.

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