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Pattern of obstetrics referral in & out in new medical college: A retrospective study in new medical college

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Abstract

The referral system is a core factor in health care delivery system. It plays a crucial role in antenatal care and child bearing by providing access to emergency obstetric care, antenatal and delivery care in primary level facilities. The study was planned to find the cause of patient referred from community health centers, their foeto-maternal outcomes and causes of further referral of these patients from our New Medical Collage hospital to further higher referral centers.

Methods: The study population consisted of patients referred from Community Health Centers to our Hospital in Government Ambulances and high risk patients referred from our Institute to further higher centers for management.

Result: During the study period there were 2785 deliveries out of which 187 were referral. The indications for referral were safe delivery in higher centers (n-38), previous LSCS in labour (n-30), postdatism (n-25), prematurity (n-15), pregnancy with medical disorders (16), and meconium in early labour (n-10), abnormal presentation (n-10), IUD (n-7), TPPROM (n) & early pregnancy loss (23). Outcome of referred patients was 79(42.24%) had caesarean section, 65(34.76%) had normal deliveries, 21(21.22%) had suction & evacuation, 2(1.06%) had laparotomies for ectopic pregnancy, 10(5.34%) patients were discharged and 9(4.81%) patients were further referred to higher centers due to non-availability of ICU and blood components.

Conclusion: If we can strengthen the Community Health Centers in term of infrastructure & manpower most of these referrals can be stopped & these patients can be managed at these centers only. If new medical colleges are provided with maternal ICU & blood components most of these patients will not be referred to regional tertiary care centers.

Keywords: Referrals, obstetric, maternal, foetal, perinatal, morbidity, mortality

Introduction

The referral system is a core factor in health care delivery system. It plays a crucial role in antenatal care and child bearing by providing access to emergency obstetric care, antenatal and delivery care in primary level facilities ^[1]. The term referral is used to indicate here recommendation of a healthcare provider at one level of the health system, having limited resources (Medications, equipment, skilled professional) to manage a clinical condition for the assistance of an improved resource facility which is of similar or higher level to assist in or take over the management of patient ^[2]. Pregnancy and child birth though physiological processes are not free of risks. Despite continuous efforts by government and non-government organizations to cut down maternal mortality and to improve health services, maternal mortality is still high in most of developing countries. After the implementation of Janani Suraksha Yojana there is three fold rise in institutional deliveries but unfortunately maternal mortality rate has not declined appreciably. The possible reasons could be poor referral system in states. The government has introduced the referral system to improve the service delivery at tertiary level, reduced workload at tertiary health care facilities allow maximum utilization of health care facilities, strengthen peripheral infrastructure, improve teaching standard and to promote research activities. The emergency admission to tertiary healthcare include large number of patients referred from rural areas. WHO guidelines (Revised in 2017) describes the management of obstetrics complications at district level with respect to period of gestation ^[3], however the use of these guidelines at different level of facilities and referral system in low resources countries is not well understood. Even basic conditions that can be managed within existing system of primary healthcare and closer to the community are unnecessarily referred to the Emergency Medical Services (EMS) of tertiary centers.

The present study was carried out to find the cause of patient referred from community health centers, their fetomaternal outcomes and causes of referral of these patients from our New Medical Collage hospital to further higher regional referral centers.

Material and Methods

This was a retrospective study carried out in the department of Obstetrics and Gynaecology, Associated Hospital Government College Kathua. The study population consisted of patients referred from Community Health Centers to our Hospital in Government Ambulances and high risk patients referred from our Institute to further higher centers for management. Inclusion criteria was all referred antenatal, intra-natal and postnatal patients to our institute and from our institute to further higher centers in Govt. ambulances with referral slips. Exclusion criteria was patients referred from sub-centers, primary health centers, private nursing homes and from Community Health Centers without Ambulances. The study was conducted retrospectively after taking the approval from the Ethical Committee of the Institute. The demographic profile and diagnosis at the time of referral were recorded from the Referral slips attached with referral- in register and their further outcome was recorded from delivery register, MTP register, OT register and NICU admission register with the help of paramedics and our staff sisters. The patients which were not managed at our Institute & were further referred to higher centers because our Institute is new Medical College which was upgraded from District Hospital three years back. We do not have facilities like HDU, ICU & Blood components because of lack of manpower and infrastructure. So we carried out this study to find the gap analysis & for strengthening of existing community health centers by providing emergency obstetric care to combat complications so as to prevent the maternal and neonatal morbidity and mortality. By strengthening the Medical Colleges we can prevent unnecessary referral loads on Regional tertiary care centers. Timely management of high risk cases at our Institution so as to prevent the delay at tertiary level which will further reduce the maternal and neonatal morbidity and mortality.

Results

During the study period there were 2785 deliveries out of which 187 were referral. The incidence of referral in our study is 6.7%. Total number of referred patients in our study were 187 out of which 100 were nulligravida and 87 were multigravida. The literacy rate in our study is 65% and illiterate 35%, 85.5% patients are from rural areas and 14.5% from urban area. There are 5 community health centers in district Kathua. Patients referred from these centers & distance they had to travel is shown in table 1.

Table 1: Community Health Centers from where patients were referred, distance travelled and time taken by them to reach the facility

Community Health Centre	N	%	Distance (In km)	Time
Nagari Parole	4	2.1	30	½
Hiranagar	58	33.2	50	1
Basohali	50	26.9	68	2
Billawar	42	22.6	81	3
Bani	32	17.2	153	5

Maximum number of patients are referred from CHC Hiranagar (n-62) followed by Basohali (n-52), Billawar (n-44), Bani (n-35) and Nagari Parole (n-4). Maximum patients travelled distance

between 50-100km. Maximum numbers of patient's belonged to hilly areas and maximum time taken by these patients to reach the tertiary care facility was 5 hours. Maximum number of patients were referred after 2 pm. The maximum number of deliveries per month in CHC Hiranagar (n-20) and nil in Nagari Parole. The indications for referral [Table 2] were safe delivery in higher centers (n-38), previous LSCS in labour (n-30), postdatism (n-25), prematurity (n-15), pregnancy with medical disorders (16), meconium in early labour (n-10), abnormal presentation (n-10), IUD (n-7), TPPROM (n) & early pregnancy loss (23).

Table 2: Distribution of patients according to cause of their referral

Indications for referral	N	%
Safe delivery in higher centre	42	22.2
Pre cesarean in labour	30	16.04
Postdatism	25	13.36
Prematurity	15	8.02
Meconium in early labour	10	5.34
Abnormal presentation	7	3.74
Term premature rupture of membranes	4	2.1
Oligohydramnios with intrauterine growth retardation	2	1.06
Obstructed labour	2	1.06
Prolonged labour	2	1.06
Covid positive	1	0.5
Pregnancy with medical disorders	16	8.55
Early pregnancy loss	23	12.2
Primary postpartum hemorrhage	8	4.27

Outcome of referred patients is shown in table 3, of 187 patients, 79(42.24%) had caesarean section, 65(34.76%) had normal deliveries, 21(21.22%) had suction & evacuation, 2(1.06%) had laprotomies, 10(5.34%) patients were discharged and 9(4.81%) patients were further referred to higher centers due to non-availability of ICU and blood components.

Table 3: Outcome of referred patients

Outcome of patients	N(%)
Caesarean section	79(42)
Normal deliveries	65(35.5)
Suction & Evacuation	21(11.5)
Laprotomy for ectopic pregnancy	2(1)
Discharged after conservative treatment	10(5.5)
Further referred to higher centre for lack of intensive care unit, blood components and neonatal intensive care unit	9(5)

Main indication for caesarean section was previous LSCS in labour followed by meconium in early labour, elective LSCS, abnormal presentation, postdatism with poor Bishop score, CPD, prolonged labour, imminent eclampsia, prolonged leaking, fetal bradycardia, precious pregnancy, cord around the neck. 12(6.41%) patients had PPH, 5 had wound sepsis, 3 patients had caesarean hysterectomy, 1 patient had relaparotomy for haemoperitoneum and there were 2 maternal deaths. Total no of babies born were 144, live 137 out of which 127 were term, 10 were preterm and 7 were IUD. 4 babies had meconium aspiration syndrome, 3 had neonatal sepsis and 2 had birth asphyxia. Causes of still birth were breech with cord prolapse (3), primi with IUGR with postdatism (2) and primi with severe PIH with IHCP (2).

Discussion

Government Medical College Kathua is new medical college started in year 2019 and attached to 5 community health centers,

59 primary health centers and 134 sub-centers. The incidence of referred patients in our study is 6.7% which is lower than other studies like study done by Gupta *et al.* 2016^[4] in which shows 15.37% of referrals which may be because we included only those patients which were referred from community health centers with proper referral slips and referred in Government ambulances. The study conducted by Rekha Jakhar *et al.* 2019^[5] show 9.96% incidence of referred patients. We did not include in our study the patient which were self-referred or were referred from sub-centers, primary health centers and from private hospitals. Maximum number of patients 120(64.52%) referred were in age group of 21-30 year, this may be because in our country marriage is at this age & which is similar (64%) to study conducted by Pandya and Patel. Gupta *et al.* (2016)^[6] reported that 86.98% of referred cases were in this age group, much higher than our study. 85% (158) patients were referred from rural areas and 15% (28) from urban areas whereas Rathi *et al.* 2010^[7] reported 67% of referral from urban areas. In our study 65%, 25% and 5% patients were referred in intra-partum, antepartum and postpartum period respectively which is comparable (56%,30% and 14%) to study done by Goswami P *et al.* (2017)^[8]. Sakhar AP *et al.* 2008^[9] observed that 65% cases travelled more than 50km distance before reaching hospital and has increased incidence of intra-operative complications and postpartum hemorrhage. The study conducted by Goswami P *et al.* 2017^[8] showed that 64.75% of cases were referred from within 50 km distance, 23.4% cases travelled 50-150 km and 11.85% cases travelled greater than 150km distance before reaching the hospital. In our study majority of patients (66.7%) travelled more than 50km distance before reaching the facility and maximum number of complications (Still birth, PPH, infections, wound sepsis) occurred in these patients. Most of these patients belonged to hilly areas. None of the community health centers have facility for cesarean section because of lack of manpower, non- functional OT and lack of blood storage units. In our study a quarter of patients (27.97%) were referred because of non- availability of OTs, Blood banks and Gynaecologists and Anaesthetists which is much higher than the study (16.87%) conducted by Goswami, *et al.* 2017^[8]. In our study 22.2% patients were referred for safe delivery in higher centers which is similar to the study conducted by Jakar, *et al.*^[5] (2019) which showed majority of patients were referred for better management of active labour (36.29%). In our study 16.04% patients were of previous LSCS in labour which is comparable to study conducted by Gupta *et al.* 2016^[4] (16%) and Khatoun A, *et al.* 2011^[10] (15%). In a study conducted by Patel HC^[11], found that meconium stained liquor (5%) was cause of referral which is comparable to our study (5.34%). Other causes of referral in this study were pregnancy with previous LSCS (12%), antepartum hemorrhage (6%), malpresentation (4%) and obstructed labour (4%) but in our study malpresentation & obstructed labour constituted 3.74% & 1.06% which comparable to their study. In our study 8.55% of patients were referred for medical disorders which was less than study conducted by Heera Shenoy *et al.* 2019^[12] (22%). Out of 186 patients 42% had cesarean section, 35.5% had normal deliveries, 11.5% had suction & evacuation, 5.5% were discharged after conservative treatment and 5% were further referred to higher centers for lack of blood components, intensive care unit and neonatal intensive care unit. The incidence of caesarean section in referred patients was 55.4% and of normal delivery was 44.6%. The incidence of caesarian section & normal deliver in our Institute is reverse i.e. 43.6% caesarean section and 56.4% normal delivery. Though this rate

too of caesarean section is also high in our Hospital because earlier it was district hospital, there was lack of manpower & time given for trial of labour was less. In year 2019, when Medical College was started caesarean section rate was 80% but now it has come down to 50 %, this was because of lack of manpower and 24x7 OT facilities. Sorbye *et al.* found that referral status contributed substantially to the increased caesarian section rate which was 55% in formally -referred patients which is comparable to our study whereas study conducted by Goswami P *et al.* 2017^[8] found that 48% had vaginal deliveries, 28% had caesarean sections and 24% of cases were managed conservatively. 6.5% patients had PPH, 4% had blood transfusions, 4.3% had wound sepsis and 2.2% had caesarian hysterectomy. There were 2 maternal deaths due to massive PPH, there were no blood components, ICU was not there & there was delay at facility and ultimately patient died of DIC even after referring the patients to higher centers. There were 144 deliveries, 95% were live births and 5% still birth, the causes of still birth was intrauterine growth retardation, breech with cord prolapse & pregnancy induced severe hypertension. All these still birth can be prevented if we screen the high risk factors at each antenatal visit and the high risk pregnancies should be supervised by specialists and emergency availability of operation theatre, manpower and blood bank.

The main indication for referral of patients from Community Health Centers was safe delivery at Health Institution, if we can strengthen the Community Health Centers in term of infrastructure, manpower & establishment of blood component units, most of these referrals can be stopped & most of these patients can be managed at these centers only. This will help to reduce the maternal mortality & morbidity. Infant mortality & morbidity will also improve. Referring time will be reduced, patients then can be referred well in time. More important the patients will complete their families within community setting only that will improve the overall wellbeing of the community.

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