A TWO YEAR ANALYSIS OF CESAREAN DELIVERY AT CMH HYDERABAD

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ABSTRACT

Objective: To determine the frequency and factors leading to cesarean deliveries and its outcome in a Military Hospital of Sindh province.

Study Design: Descriptive study.

Place and Duration of Study: Obstetrics and Gynecology Department of Combined Military Hospital Hyderabad from 1st January 2011 to 31st December 2012.

Material and Methods: All women admitted for delivery were included in the study. However those delivered by spontaneous vaginal and instrumental delivery were excluded from the study. Details of all the cases who underwent cesarean section (CS) were further evaluated. Neonates were also examined at birth and before discharge.

Results: A total of 2874 deliveries were conducted during the 2 years study period. CS was done on 1206 (41.96%) patients while normal vaginal delivery was conducted in 1668 (58.04%) patients. A total of 34.16% patients underwent elective, while in 65.84% patients CS was done in emergency. Majority (60.03%) of patients were un-booked and rest of them (39.97%) were booked. Most common indication was repeat CS, followed by CPD and mal-presentation; other indications were failed trial of labor, fetal distress, and eclampsia / preeclampsia. In our study, maternal morbidity was observed in 12.77% patients and the maternal mortality was 0.33%. A total of 1199 babies were born alive and total perinatal deaths were 73.

Conclusion: Cesarean delivery rate was mainly influenced by previous cesarean. Being a referral hospital for the families of armed forces personnel in this region, is also an important contributing factor to high CS rate. It was concluded that reduction of primary and repeat CS should be the main target of any strategy. Other measures to reduce the CS rate were the early referral and regular antenatal visits.

Keywords: Cesarean section, Indications, Rate of cesarean.

INTRODUCTION

Cesarean section (CS) has become much safer over the years, but it cannot replace vaginal delivery in terms of low maternal and neonatal morbidity and less cost[1], this statement holds true especially for the developing countries where maternal and perinatal mortality rates are unacceptably high[2]. Controversy surrounds the current rates of cesarean delivery in developed countries and its use for indications other than medical necessity[3]. It was predicted that if age-specific cesarean rates continued at the steady pattern of increase observed since 1970, 40% of births would be by cesarean in the year 2000[4]. The National Center for Health Statistics reported that the percentage of cesarean births in the United States increased from 20.7% in 1996 to 32% in 2007. Cesarean rates increased for women of all ages, races/ethnic groups, and gestational ages[5]. In a 2006 publication reviewing cesarean delivery rates in South America, the median rate was 33% with rates fluctuating between 28% and 75% depending on public service versus a private provider[6].

The leading maternal indications for cesarean delivery are previous cesarean delivery, dystocia, and fetal distress. These indications are responsible for 85% of all cesarean deliveries[7]. Fetal indications for cesarean delivery include situations in which neonatal morbidity and mortality could be decreased[8].

Maternal morbidity has been suggested as a marker to measure the standard of obstetric

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care in a community. Incidence of severe maternal morbidity varies globally. In population based studies in developed countries it has been quoted as 12/1000 vaginal delivery[12]. Major sources of morbidity and mortality can be related to sequel of infection, thromboembolic disease, anesthetic complications, and surgical injury.

Table–1: Maternal variables.

Variables	No.	%
Cases		
Booked:	482	39.03
Unbooked:	724	60.97
Type of CS		
Elective:	412	34.16
Emergency:	794	65.84
Age (Yrs)		
20 and below:	194	16.09
21 to 30:	410	35
31 to 40:	552	45.77
Above 40:	50	04.14
Parity		
Primigravida:	242	20.07
Multigravida:	628	52.07
Grand Multigravida:	336	27.86

Table–2. Indications for cesarean section (n=1206).

	Variables	No.	%
1.	Previous CS	368	30.51%
2.	CPD and Malpresentation	243	20.14%
3.	Failed progress of labor	229	19.00%
4.	Fetal distress	194	16.08%
5.	Ecclampsia/Pre-eclampsia	87	07.22%
6.	Antepartum hemorrhage	85	07.05%

Table–3. Causes of maternal morbidity / mortality (n = 1206).

	Variables	No.	%	Mortality
1.	Wound infection	44	3.65%	nil
2.	Febrile illnesses	55	4.50%	nil
3.	PPH	36	3.00%	nil
4.	Cesarean Hysterectomy	02	0.16%	nil
5.	Transfusion reactions	06	0.50%	nil
6.	Uterine rupture	01	0.08%	nil
7.	Thrombo-embolism	03	0.24%	02
8.	Acute Kidney Disease (AKD)	02	0.16%	nil
9.	APH with DIC	02	0.16%	01
10.	Eclampsia	03	0.08%	01

deliveries in UK[9] and 3.83/1000 deliveries in Scotland[10]. Comparable data from Pakistan is lacking, however in a hospital based study in Karachi maternal morbidity was 8.2% and perinatal morbidity was 5.5%[11]. Compared with a vaginal delivery, maternal mortality and especially morbidity is increased with cesarean delivery to approximately twice the rate after a Postpartum endomyometritis is increased significantly in these patients; it can be decreased to approximately 5% with the use prophylactic antibiotics[13]. Approximately 0.5-1 in 500 pregnant women experience deep venous thrombosis (DVT). DVT is sometimes difficult to diagnose, and the first sign may be a pulmonary embolus[14].

In general, obstetricians/gynecologists associate more risks with cesarean delivery and attribute fewer benefits to it[15].

This study was conducted to determine the rate of cesarean deliveries and analyze the factors responsible for apparently high CS rate in Combined Military Hospital Hyderabad and to assess the maternal and fetal outcome.

MATERIAL AND METHODS

This descriptive study was conducted from 1st January 2011 to 31st December 2012, in Gynecology & Obstetric department of Combined Military Hospital (CMH) Hyderabad. Initially data from all women delivered during the study period were collected, however only those women were further evaluated in the study who underwent cesarean section and a proforma for each patient was filled including age, parity, obstetric background, booked or un-booked. According to the recommendation of WHO Health Statistics 2013[16] at least 4 antenatal visits were considered mandatory to label the patient as a booked case and we kept this criteria in our study. Cesarean delivery was classified as elective if the decision to perform the operation was made before the onset of labor. All others were considered as emergency. Further data included, maternal indicators for cesarean delivery, and maternal and newborn outcomes until discharge. However all those women were excluded from the study who underwent vaginal or instrumental delivery, whether delivered in labor room or operation theater. Women who delivered babies at 37 weeks or more gestation were term deliveries whereas those who delivered before 37 weeks of gestation were considered preterm deliveries.

Table–4: Outcome of neonates delivered live (n=1199).

	Variables	No.	%
1.	Gender Boys	616	51.38%
	Girls	583	48.62%
2.	B Wt : LBW (< 2.5 kg)	132	11.00%
	B Wt (2.5 kg or more)	1027	85.66%
	LGA babies	40	03.34%
3.	Gest age–preterm	90	07.50%
	Term	1077	89.83%
	Post term	32	02.67%
4.	Babies shifted to NICU	270	22.50%
5.	Babies died in NICU	52	04.31%
6.	Perinatal Mortality	73	06.05%

Table-5: Neonatal morbidity and mortality: (n=270).

	Variables	No.	%	Mortality
1.	Very low birth weight/RDS	44	16.30%	19
2.	Low apgar (below 5) and poor feeding	48	17.78%	Nil
3.	Severe birth asphyxia	16	05.93%	6
4.	Transient tachypnea of Newborn	42	15.55%	Nil
5.	Meconium aspiration syndrome/pneumonia	38	14.07%	6
6.	Infant of Diabetic mother	18	06.66%	Nil
7.	Multiple congenital anomalies	18	06.66%	8
8.	NN Jaundice /Kernicterus	32	11.85%	5
9.	Neonatal sepsis/DIC/NEC	14	05.18%	8

At the end of study period the data had been analyzed by SPSS version 11. Frequency and percentages were used to describe the categorical variables.

RESULTS

A total 2874 deliveries were conducted at CMH Hyderabad during the study period from

1st Jan 2011 to 31st Dec 2012. The cesarean section was done on 41.96% and normal vaginal delivery was conducted in 58.04%. Almost two third of women underwent emergency cesarean section and majority of our patients were un-booked (table-1). The common indications for cesarean sections in our study repeat CS, CPD, malpresentation and failed trail of labour (table-2). The obstetric complications leading to maternal morbidity and mortality are summarized in table–3.

Out of 1206 mothers including 14 twins, 1199 neonates were born alive and there were 21 (1.72%) stillbirth, mostly delivered from the mothers who presented with obstructed labour, antepartum hemorrhage, eclampsia and uterine rupture. A total of 52(4.3%) neonates died later on in neonatal unit. The overall perinatal mortality was 73 (6.05%). The preterm babies were 8%, and incidence of low birth weight babies was 11% (table-4). A total of 270 (22.5%) babies were shifted to NICU (table-5).

DISCUSSION

According to WHO report 2010 it is considered national CS rates if the country had a proportion more than 90% deliveries at health facilities, for countries with a proportion of hospital deliveries <90% the same assumption would result in overestimates of CS national rates[17]. So it should be considered in this study when analyzes the cesarean delivery rate, as our national proportion of deliveries at health facilities is much below 90%. The reported benefits of cesarean section include greater safety to the mother and the baby, less pelvic floor trauma for the mother, avoidance of labor pain and convenience. The potential disadvantages include increased risk of maternal morbidity and mortality, higher cost, longer hospital stay, psychological sequele and problems with subsequent pregnancies[18]. Although there is an upward trend of cesarean deliveries all over the world, cesarean section rate in our study was 42%, which is a little higher than 35% by Yousaf et al[19] in the same region of Hyderabed, however it is much higher than another study from Peshawar by Raees et al[20] which is 22%, and 25.3% by Okezio et al[21] from Nigeria. This was probably because majority of the pregnant women of our dependent families were delivered at home by TBA/LHV's, or being followed in nearby private nursing homes without any obstetrician and specialized care, and then lately referred to us near term having one or the other risk factor, or already had a trial of labour, or mishandled by dai and developed complication. So the cesarean section was obviously high in these high risk and un-booked cases. Majority of the patients who underwent cesarean section were in 31-40 years age group i.e. 45.77% which is closer to another study by Yousaf et al[19] at Hyderabad where majority (42.90%) were in same age group of 31-40 yrs. In our study 60.03% women who underwent cesarean section were un-booked, which is a little lower to 75.3% by Yousuf[19] but contrary to 47.3% in a study by Jaleel et al, at Karachi[12]. This may be due to regional difference of antenatal care and public health facility. Emergency CS was done in 65.84%, which is closer to the study done by Yousaf et al[19] and Okezai et al[21] This is mainly due to the paucity of general and obstetrical health care awareness in the society as well as devastating depriving socioeconomic condition[22]. Repeat cesarean section was the commonest indication. This trend was also seen in other regional[19] and international studies as conducted by Notozon et al[23]. This leads us to believe that avoidance of first cesarean section would strongly influence the subsequent cesarean section. Maternal morbidity observed was wound infection in 3.64% cases which is similar to 3.60% by Yousaf et al[19] whereas PPH was occurred in 2.98% cases which is quite low than 11% by Yousaf et al[19]. The maternal mortality was 0.33%, which is lower than 0.6% in another study by Okezio et al[21]. The major cause of maternal mortality was thromboembolic disease, it is also the leading cause of direct maternal death in the UK (1.56 out of 100,000 maternities) and the second most common cause of all maternal death (direct and indirect), accounting for 11% of reported deaths[24].

Generally CS is considered a relatively safe option for the fetus. However perinatal mortality depends upon the reason for CS and gestational age of the fetus. Regarding perinatal

outcome following CS in our study 11% were LBW babies, which is lower than another study in Lahore 19% by Najmi[25], in other Pakistani studies it varies between 15-30%[25,26]. A total of 6% babies were lost in the perinatal period which is quite lower than 22.4% babies in a study by Yousaf et al, (R-19) but is closer to other study by Glezener et al[27]. The preterm babies were 7.5% in our study which is almost similar to preterm birth rates, which have been reported to range from 5% to 7% of live births in some developed countries, but are estimated to be substantially higher in developing countries and appear to be on the rise[28].

CONCLUSION

The rate of CS in our study was quite high and was influenced mainly by previous cesarean and also by the referral status of this hospital for the armed forces personnel and their families in this region. As compared with international standards, maternal and neonatal morbidity was also quite high.

CONFLICT OF INTEREST

The authors of this study reported no conflict of interest.

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