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Obstetric emergencies presenting to a rural community maternity hospital, Southern Karnataka, India

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A B S T R A C T

Obstetric emergency is defined as a life threatening condition that is related to pregnancy or delivery that requires urgent medical intervention in order to prevent the likely death of the women. Maternal mortality is an index of effectiveness of obstetric services prevailing in a country. Prevention of maternal deaths is one of the foremost goals of not only maternal and child health programmes but also other human development endeavours of a nation. To study the profile and incidence of obstetric emergencies among pregnant women delivering at a rural maternity hospital in Southern Karnataka and to assess the risk factors associated with these obstetric emergencies. Retrospective record review was done to collect information pertaining to cases admitted, procedures done and also referrals done if any. The records of one year (2006 – 2007) were reviewed of women who delivered at the study institution. There were 1520 deliveries during this period. The incidence of obstetric emergencies was 6.4%. Of all the obstetric emergencies 51.5% was contributed by traumatic post partum haemorrhage. The outcome of obstetric emergencies was 97 healthy babies, 96 healthy mothers and 1 maternal mortality.

Introduction

Obstetric emergency is defined as a life threatening condition pertaining to pregnancy or delivery that requires urgent medical intervention to prevent death of women (Campbell S et al 2000). The maternal mortality ratio (MMR), expressed as maternal deaths per 100,000 live births

over a given period, is a key measure of quality of obstetric care. According to World Health Organization (WHO) estimates, it varies up to 100-fold, from approximately 10 in developed countries to 1,000 in least developed countries.

India contributes one-fifth of the global burden of absolute maternal deaths; however, it has experienced an estimated 4.7% annual decline in maternal mortality ratio (MMR) (RGI 2006 and WHO 2012). Obstetric emergencies are the leading causes of maternal mortality worldwide and particularly in developing countries where lack of transport facilities, financial constraints due to poverty, illiteracy, ignorance, inadequate health infrastructure and meagre blood bank facilities combine to magnify the problem according to the study done by Drife J (2004) and Chukwudebelu WO (2003). Lack of health care personnel also contributes to this problem. However, there is sparse data on the contribution of obstetric emergencies to maternal mortality in developing countries like India where the maternal mortality ratios are alarmingly high, reported by WHO (2012). Kampikaho A et al (1991) and Geelhoed DW et al (2003) stated that although hospital-based studies have their limitations including referral bias, they are easy to perform in low-resource countries and can provide substantial and useful information. Obstetric emergencies have direct relationship with the quality of antenatal care. Vidhyadhar B et al (2012) proved that unregistered women especially in rural and tribal areas suffer from obstetric emergencies much more than their urban counterparts.

Maternal and fetal outcome in obstetric emergencies is adversely affected by delay at various levels, resulting in adverse outcome. According to Vidhyadhar B et al (2012) Government of India, through National Rural Health Mission (NRHM) has launched an "EmOC" (Emergency Obstetric Care) programme with the aim to train the medical officers and upgrade the infrastructure at primary health centres, so that common emergencies are dealt at peripheral level and emergencies of serious

nature get first aid before shifting to higher centres.

In order to achieve the difficult target of Millennium development goal-5 (MDG), it is important to give due attention to the nature and magnitude of obstetrical emergencies, so that corrective measures can be taken to reach the desired goal. With this background, a retrospective study was carried out to understand the incidence and nature of obstetric emergencies and their maternal and perinatal outcome at a rural maternity hospital in Southern Karnataka and to assess the risk factors associated with these obstetric emergencies.

Experimental

We conducted the study in a 50 bedded rural community maternity hospital in Southern Karnataka. This hospital mainly provides maternity health care services. It also provides outpatient services to approximately 900 patients per week. The hospital has a bed occupancy rate of approximately 85% per year. Hospital receives antenatal cases for delivery from the radius of 50 kilometres. Total of approximately 1500-2000 deliveries take place in the hospital per year. Hospital is well equipped with attached laboratory services and has round the clock availability of qualified medical team led by a resident obstetrician and gynaecologist. A retrospective record review was conducted for the year 2006 – 2007. Permission from the hospital authorities was taken. Data was collected from patient case files, labour room registers and operation theatre records. Information regarding age, parity, duration of pregnancy, educational status, socio economic class, nature of emergency, treatment given, type of operative intervention, need for blood transfusion, postoperative maternal morbidity, mortality and perinatal outcome was gathered.

The operational definition was antenatal cases which required emergency medical or surgical intervention during or within 24 hours of delivery.

Data was entered in Microsoft Excel and analyzed using SPSS for Windows version 16. Data was analyzed for simple descriptive statistics like means and proportions.

Result and Discussion

During the one-year period, there were 97 obstetric emergencies out of 1520 total deliveries giving an incidence of 6.4%. Of all the pregnant mothers 61 (62.9%) were booked while 36 (37.1%) were unbooked for antenatal care and delivery in this hospital. All of them were residents of rural area. Majority belonged to either lower middle or lower economic class as per B G Prasad classification. The maternal age ranged from 15 to 45 years with a mean of 30 ± 2 years. The parity ranged from 0 to 4 with a mean of 1 ± 1 .

The leading emergencies were atonic post partum haemorrhage (PPH), traumatic post partum haemorrhage (PPH), ante partum haemorrhage (APH) and obstructed labour. There was 1 (1.03%) maternal death during this period, and obstetric emergency accounted for this mortality. Of all the emergencies traumatic PPH accounted (51.5%) and atonic PPH contributed (38.1%).

The known risk factors which may have contributed to these emergencies were anaemia, teenage pregnancy and pregnancy induced hypertension (PIH). The cause for maternal mortality was atonic PPH in a third gravidae mother.

Table 3: Risk factors in the study population (n=97)

Maternal deaths are a significant cause of death in women in the 15–49 years age group, and they make up a larger proportion of all-cause deaths in the rural areas, compared to other regions of India according to Ann LM et al (2014). In our study, 16 patients were < 19 years of age (16.5%), 78 patients were between the ages of 20 and 30 years (80.4%), and 3 (3.1%) patients were more than 30 years of age. The mean distribution of age in studies done by Patkaret et al (1999) was 56% for the age group of 21-30 years and 14.7% for those above 30 years, and that done by Rochatet et al (1988) was 72% for the age group of 21-30 years. These studies thus showed that majority of the obstetric patients requiring critical care were in the age group of 21-30 years, which is comparable to our study. Rochatet et al (1988) further showed the maternal mortality of almost 50% in the age group of 21-30 years, and 40.14% in those above 30 years. The present study showed a maternal mortality of 1.03% in the age group of 21-30 years, whereas studies done by Bhattacharya et al (2001) and Patel et al (2001) showed the mortality ranging from 1.7 to 11.9% in the above age group which was comparable to our study. In the current study, 6.2% of the mothers were illiterate and 56.7% had high school education, whereas study done by Nishu et al (2010) showed 26.1% of illiterates and 28.9% of mothers with high school education.

In this study maximum number of women was primi gravidae 71.1% and 22.7% were second gravidae. The maternal mortality was noticed among third gravidae.

Table.1 Demographic details of study population (n=97)

Age of Mother	Frequency	Percentage
<19 years	16	16.5
20 – 30 years	78	80.4
>30 years	3	3.1
Education of Mother		
Illiterate	6	6.2
Middle education	26	26.8
High school	55	56.7
PUC	9	9.3
Graduate	1	1.0
Gravity Index		
Primi gravidae	69	71.1
Second gravidae	22	22.7
Third gravidae	4	4.1
Forth gravidae	2	2.1

Table.2 Obstetric emergencies in the study population (n=97)

Variable	Frequency	Percentage
Traumatic PPH	50	51.5
Atonic PPH	37	38.1
Ante partum Hemorrhage	6	6.2
Obstructed labour	2	2.1
Cord prolapse	2	2.1

Table.3 Risk factors in the study population (n=97)

Variable	Frequency	Percentage
Teenage pregnancy	43	44.3
Anemia	16	16.5
Pregnancy induced hypertension	4	4.1
No risks	34	35.5

Mantel et al (1998) and Bhattacharya et al (2001) showed highest maternal mortality in women with three or more parity. Thus, the results in these studies were consistent with our observations of highest mortality in multipara. Hence, as the number of pregnancy increased, more were the chances of mortality.

In this study, all the patients were admitted with direct causes, the most common being traumatic PPH (51.5%), atonic PPH (38.1%), ante partum haemorrhage (6.2%) and obstructed labour (2.1%). Baskett et al (1998), Afeesa et al (2001), and Karnad et al (2004) had shown that PIH, obstetrical haemorrhages and medical disorders of

pregnancy were the most common obstetric emergencies. However, findings in our study were not comparable to above studies. The incidence of obstetric emergencies in our study population was 6.4% and maternal mortality rate in the current study was 1.03% which was contributed by atonic PPH. Maternal mortality rate seen in the present study was lower than the mortality reported in another study by Baskett et al (1998).

The risk factors were assessed for the obstetric emergencies. The probable risk factors which may have contributed to these emergencies were teenage pregnancy (44.3%), anaemia (16.5%) and pregnancy induced hypertension (4.1%). Among the mothers (35.1%) did not have any reported risk factor. Toteja GS (2006) stated the prevalence of anaemia ranges from 33% to 89% among pregnant women with wide variations in different regions of the country. Teenage pregnancies were also noted in our study sample, which may also have contributed to obstetric emergencies.

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