CHANGING TRENDS OF MATERNAL MORTALITY IN KRISHNA HOSPITAL, KARAD FROM 2012 TO 2014

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ABSTRACT

BACKGROUND

The aim of this study was to evaluate the causes of maternal deaths in Krishna Institute of Medical Sciences, Karad.

MATERIALS AND METHODS

A three years retrospective study from January 2012 to December 2014.

RESULTS

MMR in the year 2012, 2013 and 2014 were 340, 234 and 148 per 100,000 live births respectively. There has been a gradual decline in the maternal mortality ratio at Krishna Hospital, Karad over last three years.

CONCLUSION

Proper antenatal care, emergency obstetrics care and routine audits for maternal mortalities are needed to decrease the maternal mortality as well as to evaluate the trends of maternal deaths. This will help to develop subsequent policies and protocols to tackle life threatening obstetric emergencies.

KEYWORDS

Maternal Mortality, Comparative Study in MMR, Changing Trends in MMR.

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BACKGROUND

Maternal mortality is a sensitive public health indicator. World Health Organization (WHO)'s 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) defines maternal mortality as "the death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or one incidental cause."¹ Globally, there were an estimated 289,000 maternal deaths in 2013, a decline of 45% from 1990. The sub-Saharan Africa region alone accounted for 62% (179,000) of global deaths followed by Southern Asia at 24% (69,000). At the country level, the two countries that accounted for one third of all global maternal deaths are India at 17% (50,000) and Nigeria at 14% (40,000). The global MMR in 2013 was 210 maternal deaths per 100,000 live births, down from 380 maternal deaths per 100,000 live births in 1990. The MMR in developing regions (230) was 14 times higher than in developed regions. Sub-Saharan Africa has the highest regional MMR (510).²

The country with the highest estimated number of maternal deaths is India (136,000), followed by Nigeria (37,000), Pakistan (26,000), Democratic Republic of Congo and Ethiopia (24,000 each), the United Republic of Tanzania (21,000), Afghanistan (20,000), Bangladesh (16,000), Angola, China, Kenya (11,000 each), Indonesia and Uganda (10,000 each). These 13 countries account for 67 percent of all maternal deaths.³

Statistical measures of maternal mortality are maternal mortality ratio and maternal mortality rate.

Maternal Mortality Ratio (MMR)⁴

- Refers to the number of women who die as a result of complications of pregnancy or childbearing in a given year per 100,000 live births in that year.

Maternal Mortality Rate⁴

- Maternal Mortality Rate is defined as the number of maternal deaths to women in the ages 15-49 per lakh women in that age group.

Life Time Risk

Life time risk is defined as the probability that women of reproductive age (15-49) will die due to child birth or puerperium assuming that chance of death is uniformly distributed across the entire reproductive span.

Maternal mortality rate which measures the risk of dying from pregnancy are highest in Africa. The index of quality of health services of a country is reflected by its maternal mortality ratio. Preventing maternal deaths remains one of the most important objectives of National Family Welfare Programme.

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India's maternal mortality rate (MMR), or the rate of deaths among women during or after pregnancy, declined to 16% in 2011-2012 from 2007-2009. Although the MMR dropped from 212 deaths per 100,000 live births in 2007-2009 to 178 in 2010-12, India was behind the target of 103 deaths per live births to be achieved by 2015 under the United Nations – mandated millennium development goals (MDGs). The MMR in southern states fell 17% from 127 to 105, closer to MDGs. Assam and Uttar Pradesh were the worst performing states, with an MMR of 328 and 292, respectively. Kerala and Tamilnadu have surpassed the MDG with an MMR of 66 and 90, respectively.⁵

In India, the lowest MMR is in Kerala, 66 per lakh live births, followed by Maharashtra which is 87 per lakh live births. Then comes Tamil Nadu which is at 90 per lakh live births. Overall, the maternal mortality ratio in India in 2011, 2012, 2013 and 2014 were 206, 197, 189 and 181 respectively.⁶ The aim of this study is to assess the maternal mortality ratio at a tertiary referral centre and to find out the leading causes of maternal deaths.

MATERIALS AND METHODS

Krishna Institute of Medical Sciences is a well-known referral centre in and around Karad Taluka in Satara district. It gets referrals from primary health centres, maternity homes, and polyclinics in Karad and from surrounding villages. Our study was carried out in Obstetrics and Gynaecology Department of KIMS. A retrospective study was carried out by reviewing the records of maternal deaths from the period between January 2012 to December 2014. Thirty four cases of maternal mortality were analysed with special emphasis on parity, age and antenatal care and death and cause of death.

Age Year	<20	20 to 29	30 to 39	40 to 49
2014	-	7	-	-
2013	1	9	2	1
2012	-	11	4	-

Table 1. Distribution of Age

Majority of deaths were between age group 20 to 29 years and minimum below 20 years.

Age Year	Para 1	Para 2	Para 3
2014	5	-	2
2013	7	4	1
2012	11	3	1

Table 2. Distribution of Parity

Primipara had more mortality compared to Multipara.

Year	Booked Cases	Unbooked Case	Total
2014	2	5	7
2013	1	11	12
2012	1	14	15

Table 3. Distribution of Booked and Unbooked Patients

Maximum deaths were seen in unbooked patients.

Sr. No.	Causes of Death	2012	2013	2014
1	Sudden cardiac arrest due to severe MS and MR	1	2	-
2	PPH with DIC	2	1	2
3	Ante Partum Eclampsia	1	-	3
4	Acute Fulminant Hepatic Failure with Hepatitis B and E	1	-	-
5	CCF with Severe Anaemia	2	-	-
6	APE with cerebral venous sinus thrombosis	-	1	-
7	Amniotic Fluid embolism	-	-	1
8	Imminent eclampsia with DIC	-	-	1
9	Swine Flue	-	3	1
10	APH with abruptio placenta	-	1	2
11	DIC with septic shock with dengue fever	-	1	-
12	Imminent eclampsia with abruptio placenta	-	1	-
13	Thrombocytopenia with severe anaemia with CCF	-	1	-
14	DIC with renal failure	-	1	-
15	Pulmonary thromboembolism with severe PIH	-	-	2
16	Multi organ failure due to DIC with hepatitis	-	-	2
17	Severe PIH with Hepatorenal Failure	-	-	2
18	Amniotic fluid embolism	-	-	1
19	Imminent eclampsia with DIC	-	-	1

Table 4. Distribution of Cause of Death

RESULT

Discussion

During the period from January to December 2012, 2013 and 2014, the number of total births in our maternity department were 4731, 5131 and 4406 and maternal deaths were 15, 12 and 7 respectively, giving an MMR of 340, 234 and 148 per 100,000 live births respectively.

Large number of patients were referred at terminal stages from nearby hospitals which is a major cause of death. APH, PPH and eclampsia are one of the major causes leading to maternal mortality. Improved emergency management at the primary level has improved the outcome, leading to gradual decline in the MMR over these years.

CONCLUSION

Pregnancy and labour are physiological processes but lack of a proper place, skilled hand and timely referral to specialised unit causes mortality. Training in emergency obstetric care has created some awareness among doctors and midwives. The training should percolate among interns, house surgeons, residents and health guides too. Practise and knowledge of basic aseptic techniques is essential at all levels. Testing kits for hepatitis B and E should be available at all tertiary maternity centres. Routine iron and folic acid supplementation is of proven value. Proper antenatal care, emergency obstetrics care and routine audits for maternal mortalities are needed to decrease the maternal mortality as well as to evaluate the trends of maternal deaths and that will help to develop subsequent policies and protocols to tackle life threatening obstetric emergencies.

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