Research

MATERNAL MORTALITY IN A TERTIARY CARE HOSPITAL-ONE YEAR RETROSPECTIVE STUDY

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Abstract

Background: Maternal mortality is considered a key health indicator of maternal and child health. majority of complications are preventable and treatable. The study has been planned to analyze it and to suggest recommendations for prevention of maternal deaths. This study was design to evaluate the mortality rate, to assess the direct and indirect causes of maternal deaths, the epidemiological aspects of mortality and to suggest recommendations for improvement. **Materials and Methods:** This is a retrospective study conducted over the period of one year from January 2018 to December 2018 in the department of Obstetrics and Gynecology, Government medical college, Guntur, Andhra Pradesh, India. The data was collected from the Maternal death register. **Result:** Majority of maternal deaths 85.2% occurred in the 20-25 years age group,93.5% are mutiparity,73.7% were postpartum cases, the most common direct cause of deaths is eclampsia, antepartum hemorrhage, PPH, the indirect cause of deaths is severe anemia, sepsis, CSVT, Gullian barre syndrome, ARF. **Conclusion:** On basis of present study thus we know the common cause of maternal mortality, so we can overcome it and reduced the maternal mortality.

INTRODUCTION

The health of the mother is the corner stone for the health of the entire family. According to WHO, a maternal death is defined as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.[1] Preventing maternal mortality and providing optimal outcomes both for mother and fetus are the main concerns of all obstetricians. Maternal mortality rates are also evaluated as one of the most important parameters showing the quality of health services in countries.[2] The global maternal mortality ratio showed a significant reduction in maternal deaths from 342 to 211 deaths for 100,000 live births, according to UN inter agency estimates. The MMR in low- income countries in 2017 is 462 per 100,000 live births versus 11 per 100,000 live births in high-income countries.[3]

MATERIALS AND METHODS

The present study was retrospective study of 61 cases of maternal deaths, carried out in the department of Obstetrics and Gynecology, Government General Hospital Guntur, Andhra Pradesh, over a period of one year from January 2018 to December 2018 .Data was collected from maternal death register, all identified women were reviewed regarding age, parity, booking status, educational status ,delivery status, admission to death interval and cause of maternal death, data was collected on a proforma and entered into computer using spss version 22 for analysis. Permission of institutional ethical committee was obtained before recording the data on proforma with assurance of its confidentiality. Causes of death were identified as direct and indirect causes.

RESULTS

During the study period January 2018 to December 2018 there were a total of 10,919 live births and 61 maternal deaths giving MMR of 558.6/1,00,000 live births, which is higher than the national average being a teaching institution and a tertiary care

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centre, used to get high risk complicated cases referred from peripheral centres have inflated this mortality ratio. Obstetric haemorrhage was the leading direct cause while anemia was the leading indirect cause of death.

Table 1: Maternal deaths in specific age groups

Age	Number of maternal deaths(n)	Percentage
<20	2	3.27%
20-30	52	85.24%
>30	7	11.47%
Total	61	100%

Majority of the maternal deaths occurred in age group of 20-30 years 85.24% (n=52).

Table 2: Period of Gestation

Period of gestation	No. of cases (n)	Percentage
Antenatal	15	24.59%
Postpartum	45	73.77%
Postabortal	1	1.63%
Total	61	100%

In this study postpartum period of has major mortality 73.77%(n=45)

Table 3: Registration status

Reg. status	No.of cases(n)	Percentage
Booked	3	4.91%
Unbooked	58	95.08%
	61	100%

Majority of the deaths recorded in un booked cases 95.08%(n=58)

Table 4: Maternal deaths in relation to period of delivery

S.no	Period of delivery	Number of cases(n)	Percentage
1	Post abortal	1	1.6%
2	Antepartum	15	24.5%
3	Intrapartum	-	
4	Postpartum	45	73.7%
	Total	61	100%

This table shows 1.6% maternal deaths occurred in post abortal period, 24.5% maternal deaths occurred in antepartum period. Maximum 73.7% were occurred in postpartum period and no intrapartum deaths.

Table 5: outcome of fetus of maternal deaths

S.no	Outcome of fetus	Number of cases (n)	Percentage
1	Live births	35	57.37 %
2	Still births	11	18.03%
3	Not delivered	12	19.67%
4	Aborted	3	4.91%
Total		61	100%

This table shows the status of outcome of fetus of maternal deaths, about 57.37% were live births, 18.03% still births,19.67% not delivered and 4.91% were aborted.

Table 6: Parity

Parity	No. of cases(n)	Percentage
Primi	4	6.55%
Multi	57	93.44%
Total	61	100%

This table shows majority of maternal deaths were in multiparity 93.44%(n=57)

Table 7: Time interval between maternal admissions to death

S.no	Time interval	Number of cases(n)	Percentage
1	Within first 24 hours	21	34.42%
2	2nd day and 3rd day	16	26.22%
3	4th to 7th days	12	19.6%
4	8th to 14th days	7	11.4%

5	15th to 30th days	5	8.19%
6	More than 30 days	-	-
	Total	61	100%

This table shows 34.42% of maternal deaths occurred within first 24 hours of admission, after admission into hospital followed by 26.22% were on 2nd and 3rd day, 19.6% during 4th to end of first week, 11.4% during 2nd week and 8.19% during 3rd and 4th weeks was observed.

Table 8: Maternal deaths in relation to referrals

S.no	Hospitals	Number of cases(n)	Percentage
1	PHC'S	36	59.01%
2	CHC'S	15	24.59%
3	District hospital	10	16.39%
	Total	61	100%

This table shows most of the cases 59 % referred from PHC's, followed by 24.59 % from CHC's, 16.39% from DHC.

Table 9: Direct Causes of maternal deaths

S. No	Direct causes of death	Number of cases(n)	Percentage
1	Eclampsia	12	19.6%
2	Postpartum hemorrhage	6	9.8%
3	Peripartum cardiomyopathy	4	6.5%
4	Embolism	1	1.6%
5	DIC		%
6	Antepartum hemorrhage	9	14.7%
7	Puerperal sepsis	5	8.1%
8	Surgical complications	1	1.6%
9	Abortions	1	1.6%
	Total	41	67.49%

This table shows causes of deaths maximum 24.5%(n=9+6) were due to obstetric haemorrhage (APH+PPH) followed by 19.6%(n=12) due to eclampsia. These two conditions were most leading direct causes of maternal deaths.

Table 10: Indirect causes of maternal deaths

S.no	Indirect cause of death	Number of cases(n)	Percentage
1	Severe anemia	8	13.11%
2	ARDS	1	1.6%
3	Acute renal failure	3	4.9%
4	Jaundice with hepatorenal failure	3	4.9%
5	HIV with TB	1	1.6%
6	Heart disease	2	3.2%
7	Gullian barre syndrome	2	3.2%
	Total	19	32.51%

This table shows 13.11%(n=8) maternal deaths occurred indirectly due to severe anemia, 4.9%and 4.9% occurred in postpartum period due to jaundice with hepatorenal failure and acute renal failure respectively and Gullian barre syndrome 3.2%(n=2).

DISCUSSION

During this study period our hospital had 10,919 total live births, there were 61 maternal mortality cases giving an MMR of 558.65 per 1,00,000 live births, which is higher than the national average MMR, being a teaching institution and a tertiary care centre, used to get high risk complicated cases referred from peripheral centres have inflated this mortality ratio. Obstetric haemorrhage was the leading direct cause while anemia was the leading indirect cause. Majority of maternal deaths that have occurred in a span of 1year, 84.22% are in the age group of 20-30 yrs, which is comparable with the Taneja study 78%.[4] Majority of the women had the education level of primary school. In present study,93.44% of deaths were in multiparous, which is similar to the Thomas and Mhaskar study.[5] The majority of deaths 73.7% had occurred in the postpartum period. According to Purandare et al,[6] 73.3% deaths occurred in postpartum period. Among the direct causes of maternal deaths, haemorrhage 24.5% was the leading cause for death our findings were coinciding with studies by murthy,[7] Jadhav,[8] followed by the eclampsia 14.5%, peripartum cardiomyopathy, acute renal failure, Gullian barre syndrome. 34.42% maternal deaths occurred within 24 hrs. Majority of maternal deaths 95.08% occurred in unbooked cases,Ratan Das et al,[9] reported the incidence of unbooked

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cases as 89.84% deaths it is similar to present study. Pulmonary embolism is responsible for 5.94% maternal death in present study, purandare et al,[10] reported 6.67% maternal deaths as a result of pulmonary embolism. Maternal death review meetings conducted monthly in the institution analyzed the cause of deaths and steps needed to prevent such deaths.

CONCLUSION

The MMR in the present study is higher than the national average. Most deaths could have been avoided with the help of early referral and efficient and well-equipped transport facilities. Haemorrhage, Eclampsia, and Anemia were the most common causes of maternal mortality in the present study. This can be reduced by enhancing women's access to family planning, adequate nutrition, improved water and sanitation facilities, protection from abuse, violence, discrimination, empowerment of women and involvement of men in maternal and child care would lower the mortality rate. By early registration of all pregnancies and regular follow up of cases, identifying the high risk group, appropriate care at appropriate time and active management of high risk group by frequent antenatal visits reduces mother and child mortality.Vigorous mass campaign

for community based maternal education program should be the priority of maternal health programs.

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