

Maternal mortality in Suez and Sinai

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ABSTRACT

Objective: To study maternal mortality and its causes leading to maternal death.

Design: A retrospective cross-sectional observational study in Suez General hospital - Egypt.

Population: All maternal deaths occurring during pregnancy and within 42 days of delivery after vaginal delivery and caesarean section.

Methods: This is a clinical study of maternal deaths that occurred at Suez general hospital from January 2012 to December 2013 during delivery and within 42 days.

Results: Among the 16 maternal deaths, 8 deaths occurred at age (20-35) years and 1 death occurred at age of (≥ 36) years. 3 deaths occurred in primigravida, 13 deaths had occurred in multipara. During the study period, among the 16 maternal deaths 12 deaths occurred with women with rural residence and 4 deaths with urban residence but 13 of them did not have work. 9 of them were illiterate and 5 read and write. 10 of maternal deaths were hypertensive and 12 of them exposed to post partum hemorrhage.

Conclusion: Reviewing the maternal deaths that occurred in our hospital, there is an urgent need to address the issue of obstetric haemorrhages and early intervention in PIH. Much needs to be done for maternal health care in rural areas as most of the deaths reported from urban institutions are referrals from peripheral centers. Rapid transport facilities should be made available to all remote rural areas with easy accessibility. It is necessary even in urban areas to channel the working of emergency obstetric care. This prevents early intervention and adequate emergency obstetric care. The essential obstetric care for all and early detection of complications and management of emergency obstetric care services need to be seriously looked into. Most maternal deaths are preventable by health education of masses, adequate health care in the community and transport facilities.

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INTRODUCTION

Maternal mortality continues to be one of the major public health problems especially our country. Maternal mortality is a vital index of the effectiveness of obstetric services prevailing in a country. Maternal mortality is one area in Indian obstetrics where a strong concern and consensus is seen. Preeclampsia, postpartum hemorrhage and sepsis are the most important direct causes of maternal death (1,2). Anemia and jaundice are the two important indirect causes(1,2). The causes of maternal death in developing and developed countries are almost the same but there is a massive difference in women's chance of surviving the complications.

The important delays are in:

- Seeking help
- Reaching health care facility
- Diagnosis and substandard treatment and
- Arranging blood components due to lack of blood bank or lack of sufficient stock of blood products.

SUBJECTS AND METHODS

Source of data

This is a clinical study of maternal deaths that occurred at Suez general hospital from January 2012 to December 2013.

Method of collection of data

Data on the maternal deaths that occurred at Suez general hospital during pregnancy and within 42 days of delivery of any cause were collected. The deaths were classified according to WHO classification as:

1. Direct obstetric causes
2. Indirect obstetric causes
3. Non-related causes

During the present study, total births include live-births and stillbirths. Deaths due to abortions were also included, since it is one of the important causes of maternal deaths.

In the critical study of maternal mortality with regard to age, parity, geographical location, educational status, socio-economic status, mode of delivery, causes of death and various other factors have been considered.

Inclusion criteria

All maternal deaths occurring during pregnancy and within 42 days of delivery

Exclusion criteria

All maternal deaths occurring after 42 days of termination of pregnancy
Accidents

RESULTS

A total 16 pregnancy-related deaths occurring during 2012 to 2013 were identified.

Table (1): Distribution of the studied cases according to different parameters (n = 8407)

	Living No. (%)	Mortality No. (%)	χ^2	p
Age (years)				
<20	1759(20.92%)	7(0.08%)	4.997	^{FE} p= 0.057
20 – 35	6131(72.93%)	8(0.10%)	4.313*	^{FE} p= 0.048*
≥36	501(5.96%)	1(0.01%)	0.002	^{FE} p= 1.000
Parity				
Pg	2847(33.86)	3(0.04%)	1.642	0.200
Multipara	5544(65.95)	13(0.15%)		
Residence				
Rural	5030(59.83%)	12(0.14%)	1.508	0.219
Urban	3361(39.98%)	4(0.05%)		
Work				
Not working	6188(73.61%)	13(0.15%)	0.465	^{FE} p= 0.776
Employee	2203(26.20%)	3(0.04%)		
Illiteracy				
Illiterate	3369(40.07%)	9(0.11%)	1.722	0.189
Read & write	3399(40.43%)	5(0.06%)	0.568	0.451
School & university	1623(19.31%)	2(0.02%)	0.479	^{FE} p= 0.752
Medical disorders (n=686)				
Hypertensive Disorders	383(4.56%)	10(0.12%)	117.215*	^{FE} p <0.001*
Diabetic	158(1.88%)	Zero (0.0%)	0.306	^{FE} p=1.000
Cardiac	135(1.61%)	Zero(0.0%)	0.261	^{FE} p=1.000
Post partum hge.				
Yes	1102(13.11%)	12(0.14%)	53.174*	^{FE} p <0.001*
No	7289(86.70%)	4(0.05%)		

²: Chi square test

FE: Fisher Exact for chi square test

*: Statistically significant at $p \leq 0.05$

Table (2): Comparison between the different groups according to mortality rate

		2012			2013			Total
		Normal (n =3204)	C.S. (n =1032)	Total	Normal (n =3213)	C.S. (n =958)	Total	
Mortality rate	No.	1	4	5	0	11	11	16
	Rate	0.012%	0.048%	0.059%	0.000%	0.131%	0.131%	0.190%

DISCUSSION

Complete and accurate identification of all deaths associated with pregnancy is a critical first step in the prevention of such deaths. Only by having a clear understanding of the changing trends and the magnitude of pregnancy-related mortality can be comprehensive prevention strategies be formulated to prevent these unanticipated deaths among women.

During this study period from January 2012 to December 2013, 16 maternal deaths have occurred among 8407 pregnant females during delivery. In this study maternal mortality with regard to age, parity, rural vs urban, socio economic status, educational status, time , mode of delivery and causes of death were critically analyzed.

Majority of maternal deaths have occurred in the age group of 20-35 years and this correlates with Surendranath Panda et al (2000)(3) and Nikhil Purandare et al (2007).(4) In the present study majority of maternal deaths occurred in rural populations and this correlated with the study Verma Ashok et al (2008)(5) and Jadhav AJ et al (2007).(7) The rural populations are at greater risk due to poor transport facilities to reach the referral central in time.

In the present study majority of maternal deaths occurred in low socio economic status people and this correlated with Verma Ashok et al (2008).(5)

In our present study, educational status of women is comparatively better when compared to other studies. Majority of deaths have occurred in women who are illiterate and this correlated with Surendranath Panda et al studies where majority of maternal deaths have occurred in women who are illiterate.(3)

Women with education are more likely to marry later, delay child bearing, use family planning methods, seek antenatal care and make use of obstetric services available at their locality.

In our study, majority of maternal deaths have occurred in women who had caesarean section, in contrast with the results obtained from the study of Nikhil Purandare et al (2007).(4)

The result of the present study correlates with Surendranath Panda et al (2000) and Verma Ashok et al (2008) with the direct obstetric causes contributing to the majority of maternal deaths.(3,5)

Our present study also correlates with WHO study⁸ and SRS2 in India. Because of lack of awareness, irregular ANC's and other social factors prevent women from approaching hospital.

Haemorrhage and hypertensive disorders of pregnancy are the major direct causes contributing equally to the causation of maternal mortality in our study, in contrast to Studies by Nikhil Purandare et al⁴, Surendranath Panda et al⁽³⁾, SRS2 and WHO studies⁽⁸⁾ where haemorrhage is the leading direct cause of maternal mortality. Most deaths in our study occurred inspite of availability of blood bank facility and availability of specialist doctors within the hospital. Although obstetric haemorrhage is vigorously tackled, the prevalence of nutritional anaemia and poor general condition failed to prevent the maternal tragedy.

In our study, anaemia is the leading indirect cause of maternal mortality which correlates with the results from Surendranath Panda et al (2000)⁽³⁾ and Verma Ashok et al (2008).⁽⁵⁾

Pre-existing anaemia worsens as pregnancy advances leading to congestive heart failure and death. It also impedes the mother's ability to resist infection or cope with haemorrhage and increases the likelihood of her dying in childbirth by a factor of four.

CONCLUSION AND RECOMMENDATION

Reviewing the maternal deaths that occurred in our hospital, there is an urgent need to address the issue of obstetric haemorrhages and early intervention in PIH. Much needs to be done for maternal health care in rural areas as most of the deaths reported from urban institutions are referrals from peripheral centers. Rapid transport facilities should be made available to all remote rural areas with easy accessibility. It is necessary even in urban areas to channel the working of emergency obstetric care. Facilities in the urban hospitals are grossly inadequate with the shortage of anesthetists, pathologists and blood banks. This prevents early intervention and adequate emergency obstetric care. As well as cooperation with other departments is essential in cases of medical disorders complicating during pregnancy. The essential obstetric care for all and early detection of complications and management of emergency obstetric care services need to be seriously looked into. Post mortem examination should be conducted in all maternal deaths where the cause of death is in doubt. The public should be convinced to realize the importance of such procedure. Traditional birth attendants should be given adequate training to recognize abnormalities of pregnancy and labour since a large number of deliveries are still conducted at home in rural areas. Most maternal deaths are preventable by health education of masses, adequate health care in the community and transport facilities.

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