Maternal Mortality at Lady Willingdon Hospital: A comparison of causes twenty years apart

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To determine the causes of maternal deaths and to ascertain if there was any change in the causes between the recent years as compared to the past. *Methods:* The causes of maternal mortality were studied from the available records of the period Jan1976 - Nov 1977(GroupA) and compared with the causes of maternal deaths 20 years later i.e. Jan 1996 - Nov 1997(GroupB). The study was conducted at Lady Willingdon Hospital, Lahore. Deaths due to sepsis have reduced from 33.34% to 11.25%, maternal deaths due to hypertensive disorders and haemorrhage have increased from 13.52% and 10.82% to 35% and 25% respectively. The results of other causes of death have also been discussed. A reduction in maternal mortality ratio can be achieved by reorganizing the available maternity services. The availability of trained doctors and specialists, training of traditional birth attendants, community education, emergency obstetric services and provision of drugs has contributed in lowering the hospital based maternal mortality. Confidential enquiries of all maternal deaths should be conducted, in order to further reduce the maternal mortality ratio.
Key Words: Maternal mortality; causes.

The Lady Willingdon Hospital is located in northern Lahore. It is a major government hospital available to patients who are referred from adjoining districts and even far flung areas. However the majority of patients admitted to the hospital are from the adjacent localities e.g. the walled city of Lahore, Badami Bagh, Shahdara and the suburbs of Lahore. While working at Lady Willingdon Hospital, there was a feeling that over the years the maternal mortality has reduced.

In order to reduce the maternal mortality it is important that the factors and causes responsible for the deaths should be identified. Measures adopted against these will be effective in reducing the maternal mortality ratio. Various studies have established haemorrhage, infection and hypertensive disorders as the major causes of maternal mortality [1,2,3,4,5]

Material and Methods

A study was carried out at Lady Willingdon Hospital, Lahore. The hospital records were searched to find out the causes of maternal deaths amongst the admitted patients and to determine if there was any change in the causes between the recent years as compared to the past. Accurate record of various causes of maternal mortality was available for the period between January 1976 to November 1977(Group A). These figures were compared with the figures for the same duration twenty years later i.e. January 1996 to November 1997(Group B).

Results

There were 111 maternal deaths and 8781 births at Lady Willingdon Hospital between January 1976 to November 1977 (Group A). The maternal mortality ratio was 12.6 per1000 births. The records of only 87 patients out of the 111 who died were available for the study, the rest were either missing or damaged. The percentages have been calculated from 111 records. In Group B i.e. between January 1996 and November 1997, there were 80 maternal deaths and 15072 births. The maternal mortality ratio was 5.31 per 1000 births. There were 37 (33.34%) maternal deaths in Group A due to infections. The infections were due to induced criminal abortion, postabortal and puerperal sepsis. In Group B the maternal deaths from infection were 9 (11.25%) with similar causes.

Table 1. Causes of Maternal Mortality

Cause	Maternal deaths	
	Group A n =(%)	Group B n= (%)
Infections	37 (33.34)	9 (11.25)
Hypertensive disorders	15 (13.52)	28 (35)
Haemorrhage	12 (10.82)	20 (25)
Hepatic coma	7 (6.3)	0
Pulmonary edema	4 (3.6)	0
Cardiac failure	4 (3.6)	1 (1.25)
Pregnancy & malignancy	3 (2.7)	1 (1.25)
Accidents of anaesthesia	2 (1.8)	2 (2.5)
Acute pulmonary oedema	1 (0.9)	1 (1.2%)
Surgical shock	1 (0.9)	0
Diabetic coma	1 (0.9)	0
Genital tract injury	0	6 (7.5)
Missing record /Unsure diagnosis	24 (21.62)	12 (15)
TOTAL	111	80

There were 15 (13.52%) deaths in Group A and 28 (35%) deaths in Group B due to hypertensive disorders.

Haemorrhage accounted for 12 (10.82%) deaths in Group A and 20 (25%) deaths in Group B.

There were 24 patients (21.62%) in Group A, whose records were missing and their cause of death could not be ascertained. Similarly in 12 (15%) patients of Group B, the cause of death was not determined.

In Group A, there were 7 (6.3%) deaths due to hepatic coma, 4 (3.6%) from pulmonary embolism, 4 (3.6%) from cardiac failure, 3 (2.7%) due to malignancy, 2 (1.8%) due to accidents of anaesthesia and 1 (0.9%) death each because of acute pulmonary oedema, surgical shock and diabetes mellitus. In Group B, there were 6 (7.5%) deaths due to maternal injury, 2 (2.5%) from accidents of anaesthesia and 1 (1.25%) each due to cardiac failure, malignancy and acute pulmonary oedema. There were no deaths due to hepatic coma, pulmonary embolism, surgical shock or diabetes mellitus.

Discussion

The maternal deaths due to infection have definitely reduced tremendously. Twenty years ago sepsis accounted for every third maternal death. Now it is responsible for every ninth maternal death. This may be because of better knowledge and realization of the aseptic techniques amongst the health care personnel including the traditional birth attendants and lady health visitors. Not only this, the availability and use of new antibiotics like cephalosporins and metronidazole, during this period of twenty years might have brought about this difference. In another study from Lahore, carried out at Sir Ganga Ram Hospital, sepsis was responsible for 7.7% of the deaths during the ten year period from 1983 to 1992[2]. This is comparable to the deaths due to sepsis occurring in our hospital during the last two years. A sharp decline in maternal mortality rate was seen in England in 1937 when sulphonamides were first introduced. The deaths from puerperal fever were responsible for about 78% of the total reduction in maternal mortality in England and Wales between 1934 and 1940[6].

Puerperal sepsis was responsible for 16.3% of direct maternal deaths in a population based survey conducted in selected clusters in Karachi, Balochistan and the North West Frontier Province from 1989 to 1992[7].

With the reduction in sepsis, hypertensive disorders have become the leading cause of maternal deaths. Now every third maternal death is due to a hypertensive disorder. Eclampsia is associated with a high mortality rate even in countries like the UK[8] and Trinidad[9]. In the University Hospital Banaras, India, nearly every third eclamptic parturient died[10]. Substandard care also adds to the maternal mortality. If only this aspect is taken care of, we may be able to reduce the maternal mortality from eclampsia. Substandard care was identified in up to 77.8% cases in Singapore[11].

Deaths from hypertensive disorders and hemorrhage constitute 60% of the total deaths in our study. Haemorrhage is the leading cause of maternal deaths as reported from France[12], Ghana[13] and China[14]. Pregnancy induced hypertension, hemorrhage and embolism are the three leading killers in the United States of America[15].

Cases of genital tract injury were seen only in Group B. All the cases were with ruptured uterus due to obstructed labour. Such cases were not seen in Group A probably because of missing records and poor documentation. Trauma as a cause of maternal mortality is not common but it has been reported from Karachi. An accidental fall is unusual but during the period of 1991-1996, maternal deaths due to roadside accidents have been reported[16].

The other causes of deaths like cardiac disease, pulmonary embolism and edema, anaesthesia and diabetes mellitus have also reduced and can be further reduced with better care at specialized units.

Hospital based causes of maternal mortality are not a true reflection of the actual status of the population based estimates.

The fall in maternal mortality in the developed world has been possible due to the uplift of the social and economic conditions in addition to the better medical care[17].

It is obvious that if and when the maternal mortality begins to fall, it will be due to a reduction in deaths from different causes. In order to achieve this, the health services available do have a contribution towards the individual causes of maternal deaths; e.g. blood transfusion services for haemorrhage and intensive care units and availability of required drugs for hypertensive disorders.

A reduction in maternal mortality ratio can be achieved by reorganizing the available maternity services. The availability of trained doctors and specialists, training of traditional birth attendants, community education, emergency obstetric services and provision of drugs has contributed in lowering the hospital based maternal mortality.

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