

Maternal Morbidity and Mortality Associated with Puerperal Sepsis

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ABSTRACT

OBJECTIVE: To identify frequency and risk factors in patients presenting with puerperal sepsis in tertiary care hospital.

STUDY DESIGN: Retrospective study

PLACE AND DURATION: Department of Obstetrics and Gynaecology (Unit-II) Liaquat University Hospital, Hyderabad, Sindh from June 2006 to May 2008.

METHODS: The frequency and predisposing factors were analyzed in patients presenting with puerperal sepsis in tertiary level hospital. Medical record of patients who fulfilled criteria of puerperal sepsis was scrutinized and data was entered in a predesigned proforma.

RESULTS: Over the study period 230 patients presented with puerperal sepsis representing 6.28% of 3656 admissions in gynecological unit II. So for risk factors were concerned all patient were anemic, 90.86% patients were unbooked and 64.34% patients arrived in university hospital after being from more than one station. 56.08 %patients had frequent vaginal examination(more than five), 54.78 % patients were delivered at home, 48.26% patients were with prolong rupture of membrane (>6hrs), and 46.52% cases with prolong labour. 16.95% patients were admitted with altered consciousness and mortality rate was 21.68%.

CONCLUSION: The study concluded that puerperal sepsis was preventable in majority of cases. Maternal mortality due to puerperal sepsis was very high with 21.68%.

KEY WORDS: Puerperal sepsis, Risk factors, maternal mortality, maternal morbidity, prevention.

INTRODUCTION

Puerperal sepsis is serious form of septicemia contracted by women during or soon after child birth or miscarriage⁽¹⁾. The first recorded epidemic of puerperal fever occurred at the Hotel-Dieude Paris in 1646. Hospitals through out Europe and America consistently reported death rates of 20% to 25%⁽²⁾. During 18th and 19th centuries, it was the single most common cause of maternal mortality, accounting for about half of all deaths related to child birth and second only to tuberculosis in killing women of child bearing age. Introduction of antisepsis⁽³⁾ technique of hand washing, introduction of carbolic acid invention of germ theory in 18 century reduced maternal mortality from 18% to 3%⁽⁴⁾. After the importance of antiseptic techniques became widely understood in the 20th century along with the mid century introduction of new antibiotics, death rate greatly reduced due to sepsis in developed world⁽⁵⁾. So for things have remained same in developing countries for last 160 years. In 2008 WHO (World health organization) stated that puerperal sepsis is the second leading cause of maternal mortality in developing countries⁽⁶⁾. Number of studies had been published from same institute in last two decades showing high frequency of puerperal sepsis and maternal mortality due to puerperal sepsis^(7, 8, 9). Keeping in view this back ground we analyzed the patients presenting with puerperal sepsis in tertiary level hospital affiliated

with a university to find out where we are standing in 21 century so for puerperal sepsis is considered.

PATIENTS AND METHODS

This study was carried out in Liaquat University Hospital Hyderabad, affiliated with Liaquat University of Medical and Health Sciences, Jamshoro. A retrospective descriptive study from June 2006 to May 2008 was carried in Gynae Unit-II. Patients of puerperal sepsis were scrutinized by reviewing case records. Data were entered in predesigned proforma. Inclusion criteria were any patient presenting with fever, foul smelling vaginal discharge, abdominal distention, infected abdominal or episiotomy wound either immediately after delivery, caesarian section, and miscarriage or within 42 days of these events. Exclusion criteria were patients presenting with fever during pregnancy, 42 days after delivery, caesarian section, miscarriage or patients presenting with fever due to malaria or typhoid Data were entered into SPSS version 16 and analyzed for frequency of puerperal sepsis, maternal mortality due to puerperal sepsis and associated risk factors.

RESULTS

Over the study period 230 patients presented with puerperal sepsis representing 6.28% of 3658 admissions.

Table I shows risk factors leading to puerperal sepsis.

All patients were anemic, in 228 (99%) patients no aseptic measures were taken, 209 (90.86%) patients were unbooked, 129 (56.08%) patients had frequent vaginal examination, 126 (54.78%) patients had home delivery, 111 (48.26%) patients had prolong rupture of membrane, 107 (46.52) patients had prolong labor and 30 (9.13%) patients had unsafe miscarriage.

TABLE I: RISK FACTORS

Risk Factor	N (%)
Anemia	230 (100)
Non adherence of asepsis	228 (98)
Unbooked	209 (90.86)
Frequent vaginal examination(more than five)	129 (56.08)
Home delivery	126 (54.78)
Prolong Rupture of membrane	111 (48.26)
Prolong labour (More than 12 hours)	107 (46.52)
Induce abortion	30 (9.13)

DISCUSSION

Maternal death due to puerperal sepsis has been a fact of life through out human history but introduction of aseptic technique and antibiotic in the 18th, 19th and 20th century resulted into significant reduction in maternal mortality in wealthy nations⁽⁵⁾. Historically, it was leading cause of maternal death in UK and other developing countries, but due to invention of antibiotic, cases declined significantly; confidential inquiry into maternal and child health reported no attributable death between 1982 – 1984 ⁽¹⁰⁾ which is a great achievement. So far scenario things has remained almost same in developing countries during in last 160 years and puerperal sepsis is still a leading cause of maternal mortality in Pakistan ⁽¹¹⁾, India ⁽¹²⁾, South Africa ⁽¹³⁾, Niger ⁽¹⁴⁾ and Mali ⁽¹⁵⁾. Though majority of these studies are from teaching hospitals which is not likely to be representative of country but these are best guess estimates. In current study maternal mortality due to puerperal sepsis is 21.68%, almost same as in other studies from same institute over last eighteen years ^(7,8,9), this rate is comparable to studies from Abbottabad ⁽¹⁶⁾, sukkur ⁽¹⁷⁾ but higher when compared to other studies, as from Bahawalpur ⁽¹⁸⁾, Karachi ⁽¹⁹⁾ and Peshawar ⁽²⁰⁾. The reasons of persistently high maternal mortality due to sepsis is multifactorial like home deliveries by unskilled birth attendants in unhygienic conditions, late referral to hospital, low socio-economic condition, prolong labor, induced miscarriage and anemia. In current study 54.78% women

were delivered at home while Pakistan demographic and health survey shows that 65% of Pakistani women are delivered at home ⁽²¹⁾ while 9.13 % patients had induced miscarriage in current study. Deliveries and induced miscarriage were conducted in unsafe settings and in unhygienic conditions by untrained or poorly trained birth attendants, while in developed countries single most contributing factor for puerperal sepsis is caesarean section ⁽²²⁾. In developed countries concept of unsupervised deliveries without aseptic measures is part of past and incidence of induced miscarriage are very low because of legalization of miscarriage ⁽²³⁾. In a study at lfe hospital in Nigeria the predisposing factors associated with sepsis were anemia in 69.2% of cases, prolong labor in 65.7% cases, frequent vaginal examination in 50.7% of cases ⁽²⁴⁾ while it is 100%, 46.52% and 56.08% in our study. To have sepsis due to high percentage of anemia, prolong labor, unsupervised deliveries, induced miscarriage is ridicules and totally preventable, what only need is implementation of policies regarding maternal health. Frequency of puerperal sepsis in current study is 6.28% while it shows variation from 1 to 50% in published literature ⁽²⁵⁾. Such a wide variation could be because of different definitions, study design, study population whether delivered at home or in health facilities On the other hand when compared to developed countries the incidence of puerperal sepsis is significantly low in USA ⁽²⁶⁾ and UK ⁽²⁷⁾, because of implementation of aseptic technique, increase in health facilities to home deliveries ratio while it is vice versa in Pakistan ⁽¹¹⁾, India ⁽¹²⁾ and South Africa ⁽¹³⁾. Viennese doctors Ignaz Philipp Semmelweis reduced maternal mortality 161 years ago by applying aseptic techniques from 18% to 3%. The mortality rate due to sepsis at that time in Vienna (i.e. 30%) is the present mortality rate prevalent in developing countries, as in these countries resistance to the simple but life saving 19th century innovation is still alive.

CONCLUSION

The study concluded that puerperal sepsis is a preventable and treatable illness, however timely recognition is very important. When remain unrecognized for long period of time, it may kill the mother and those who salvaged are mostly left with irreversible morbidity. Education of doctors, mid wives and medical students about the related risk factors, symptoms, signs, investigation and treatment of sepsis is of prime importance for recognition of this critical illness as this can reduce morbidity and mortality.

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