



Clinical Presentation and Mortality of Women Presented with Puerperal Sepsis at Tertiary Care Hospital

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Authors' contributions

This work was carried out in collaboration among all authors. Author ES designed the study, collected the data and wrote the first draft of the manuscript. Authors MA and NP managed the analyses of the study and literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Objective: To determine the clinical presentation and mortality of women presented with puerperal sepsis at tertiary care Hospital.

Materials and Methods: This cross-sectional study was conducted at obstetrics and gynaecology department of Liaquat University of medical and health Sciences, from April 2018 to march 2019. Women having age more than 15 years and presented with sepsis after birth followed by spontaneous vaginal delivery, instrumental or episiotomy vaginal delivery or caesarean section were included. All the data including clinical features and mortality were recorded by study proforma. Data was analyzed by using SPSS version 20.

Results: Most of the patients 46.6%, having age between 26 to 35 years. Majority of the patients 48.3% were delivered by normal vaginal delivery (NVD) and 37.9% underwent caesarean section, while 13.8% given birth as NVD with episiotomy. Almost all cases presented with fever and other common clinical features were abdominal pain, vaginal discharge, wound infection and breast tenderness. According to the maternal outcome 24.1% patients were shifted to intensive care unit (ICU), 34.5% had prolonged hospital stay and mortality rate was 10.3%. There was no significant difference in maternal outcome according to mod of delivery; p-values were quite insignificant.

Conclusion: It was concluded that puerperal sepsis is a major contributing factor of maternal adverse outcome. Common clinical features were fever, abdominal pain and vaginal discharge.

Keywords: Puerperal sepsis; morbidity and mortality.

1. INTRODUCTION

Puerperal sepsis (P. sepsis) is a genital tract infection that occurs after delivery or miscarriage. It is accountable for >10% of maternal fatalities globally and excessively occur in developing nations [1]. P. sepsis seems to be the world's third leading factor for maternal fatalities following hypertension and hemorrhage, and the 2nd leading factor in Asians and Africans following hemorrhage [2]. P. sepsis is a sepsis acquired by females during or shortly after miscarriage or childbirth [3,4]. It is an assemblage of fever symptoms and additional indications of pelvic discomfort, vaginal discharge with foul-smell, and uterus sub-involution during sepsis. Sepsis, together with its clinical symptoms, is characterized as infection [3]. Serious sepsis is described as a potentially dangerous disease characterized by systemic inflammation syndrome accompanied by organ dysfunction, infection, hypotension or hypoperfusion [3,5]. Different factors contribute to P. sepsis and can vary between regions and the medical care obtained after and during delivery [6]. Home childbirths in poor hygiene, low income, inadequate diet, protracted membrane rupture, primiparous, postpartum haemorrhage and prolonged labour are predisposing factors contributing to P. sepsis [7]. The prevalence of postpartum sepsis differs globally, with reports ranging from 2% to 10%, and fluctuates with risk factors including low income, delivery location, prolonged labour, poor nutrition, anemia, premature membrane rupture, primiparity, multiple pregnancies, overweight, and form of delivery (c-section or vaginal), >5 vaginal scans throughout labour, additional obstetrical efforts, and avoiding antibiotic prophylaxis usage [8-10]. Proper treatment and good technologies needs to be linked with effective health system intervention to decrease the infection [11]. It is a preventable disorder by taking proper hygienic labour room and OT atmosphere and by done deliveries at complete facilitative health facilities and early diagnosis and management. This study intended to assess the clinical presentation and mortality of women presented with puerperal sepsis at tertiary care Hospital.

2. MATERIALS AND METHODS

This cross-sectional study was conducted at obstetrics and gynaecology department of Liaquat University of medical and health Sciences. Study was conducted during one year from April 2018 to march 2019. All the women having age more than 15 years and presented with sepsis after birth followed by spontaneous vaginal delivery, instrumental or episiotomy vaginal delivery or caesarean section were included. Women those were resented with fever caused by malaria, typhoid or any other indication which was associated with birth and patients those were not agree to participate in the study were excluded. After taking informed consent women underwent complete clinical examination and required laboratory investigations. Patients were interviewed regarding mode of delivery, place of delivery, socioeconomic status, and duration of delivery or caesarean section. All the data including signs/symptoms, complications and mortality were recorded by study proforma. Data was analyzed by using SPSS version 20. Mean and standard deviation were computed for numerical data. Frequency and percentage were computed for categorical data. Chi-square test was applied and p-value <0.05 was taken as significant.

3. RESULTS

Total 58 patients presented with puerperal sepsis were studied, most of the patients 46.6% were between age group of 26 to 35 years, followed by 29.3% had age group of 15 to 25 years and 24.1% were above 35 years of age. Majority of the patients 48.3% were delivered by NVD and 37.9% underwent caesarean section, while 13.8% given birth as NVD with episiotomy. 75.9% women had parity 1-3 and 17.2% presented with parity of 4-6. Most of the deliveries 58.6% conducted by doctors, followed by 13.8% performed by TBA, 10.3% by nurses and 6.9% deliveries conducted by LHV Table 1.

According to the clinical presentation almost all cases presented with fever. Other common clinical features were abdominal pain, vaginal discharge, wound infection and breast

tenderness, followed by nausea and vomiting, vaginal bleeding, dyspnea, breast engorged, DIC, urinary dribbling and abdominal distension as shown in Table 2.

According to the maternal outcome 17.2% patients were shifted to ICU, 34.5% had

prolonged hospital stay, mortality rate was 10.3% and remaining were normally discharged Table 3.

There was no significant difference in maternal outcome according to mod of delivery, p-values were quite insignificant Table 4.

Table 1. Demographic characteristics of the patients n=58

Variables		Frequency	Percent
Age groups	15-25 years	17	29.3
	26-35 years	27	46.6
	>35 years	14	24.1
MOD	NVD	28	48.3
	NVD with episiotomy	08	13.8
	Cesarean section	22	37.9
Parity	1-3	44	75.9
	4-6	10	17.2
	>6	04	6.9
Delivery conducted by	TBA	08	13.8
	LHV	04	6.9
	Doctor	40	68.9
	Nurse	06	10.3

MOD: Mode of delivery

Table 2. Clinical presentation of the patients n=58

Clinical presentation	Frequency	Percent
Fever	55	93.1
Abdominal pain	20	34.5
Abdominal distension	10	17.2
Nausea and vomiting	06	10.3
Vaginal discharge	20	34.5
Perineal discomfort	02	03.4
Vaginal bleeding	12	20.7
Dyspnea	12	20.7
Breast tenderness	14	24.1
Breast engorged	04	06.9
Bowel sound audible	20	34.5
Inability to pass the urine	02	03.4
DIC	04	06.9
Frequency/urgency	02	03.4
Urinary dribbling	02	03.4
Wound infection	14	24.1

Table 3. Complications and mortality of the patients n=58

Outcome	Frequency	Percent
Shifted to ICU	10	17.2%
Prolonged Hospital stay	20	34.5%
Mortality	06	10.3%
Normally discharged	22	37.9%

Table 4. Mortality according to mode of delivery n=58

Variables		Mode of delivery			P-value
		NVD	NVD+ episiotomy	SC	
Shifted ICU	Yes	4	0	6	0.184
	No	24	8	16	
Maternal mortality	Yes	3	1	2	0.225
	No	25	7	20	
Prolonged Hospital stay	Yes	19	8	17	0.170
	No	9	0	5	

4. DISCUSSION

Puerperal sepsis is amongst the primary drivers of maternal mortality and morbidity and a significant public health issue [12,13]. In present study, most of the patients 46.6% were between age group of 26 to 35 years, followed by 29.3% had age group of 15 to 25 years and 24.1% were above 35 years of age. 75.9% women had parity 1-3 and 17.2% presented with parity of 4-6. In comparison to our results, study conducted by Pradhan B et al. [14] reported that most females were aged from 20 to 29 years, booked and primiparous cases without membranes. Another study conducted by Vallet L et al. [15] showed that parity and age inclined towards younger age as in 70% cases aged below 30 years and among 30% with parity below 2. Khaskheli et al. [16] also revealed that P. sepsis was more among un-booked patients who were grand multiparous. This is the community of females who struggle too much with infectious morbidities in developing nations globally, this may be attributed to malnutrition, illiteracy, poverty, pregnancy starting in bad condition and having poor resistance against infection, these females generally do not pursue contraceptive advice or antenatal checkup. Another study conducted by Khaskheli MN et al. [16] reported that most the females 84(65.1%) had an age ranging between 31 years and more, 101(78.3%) multiparous and 98(76%) un-booked cases.

The diagnosis for puerperal sepsis is based on the symptoms of uterus with sub-involution, a vaginal discharge with foul smell as well as open cervix having symptoms of sepsis (tachypnoea, tachycardia and temperature). In present study, according to the clinical presentation almost all cases presented with fever. Other common clinical features were abdominal pain, vaginal discharge, wound infection and breast tenderness, followed by nausea and vomiting, vaginal bleeding, dyspnea, breast engorged, DIC, urinary dribbling and abdominal distension. In comparison to our results, study conducted by

Shamshad et al. [7] reported that morbidity for P. sepsis was frequently discharge with foul smell in 23 (25%) cases, retained conception product in 41 (44.5%) cases, peritonitis in 8 (8.6%) cases, septicaemia among 4 (4.3%) cases, pelvic abscess among 10 (10.8%) cases, endotoxic shock among 4 (4.3%) cases, disseminated intravascular coagulation among 2 (2.1%) cases. Another study conducted by Pradhan B et al. [14] reported clinical presentation of puerperal pyrexia are urinary tract infections among 47.5% of cases, wound infection among 20.5% of cases, endometritis among 19.7% of cases, retained conception product among 8.2% of cases, pyoperitoneum among 2.5% of cases and septicemia among 1.6% of cases.

In this study mortality rate due to p sepsis was 10.3%. Other studies report 19.2% of mortality rates [17]. Sepsis accounts for an approximate 15% of all associated maternal fatalities [18]. National statistics for Pakistan indicate that maternal fatalities of around 15% are attributed to sepsis [19]. After hypertensive disorders and haemorrhage, it yet remains the third main factor of mortality. Ngonzi J et al. [20] stated that puerperal sepsis was the frequent reason of maternal death 30.9%. Shamshad et al. [7] reported that death rate was 14.2% due to sepsis. Sepsis has been the third prevalent factor of mortality mentioned in other studies also [21]. In this study mortality rate was low according to other studies. The present mortality rate was mostly seen in patients those were delivered at local health facilities and patients were delayed to reaching the tertiary care Hospital. In this study, there was no significant difference in maternal outcome according to mod of delivery; p-values were quite insignificant. Study conducted by Ahmed N et al. [22] and Simoes E et al. [23] reported that Delivery mode does not itself influence the incidence of sepsis when optimal aseptic steps are taken. Different studies have documented an elevated incidence of sepsis during c-section deliveries. Basically, the circumstances result in C-section and provide the

ground for infection. Trauma/ tissue exposure and manipulation are more than the vaginal delivery in its occurrence. Sepsis of the genital tract develops with greater incidence in which c-section are carried out for obstructed labor, chorioamnionitis and prolonged labor.

5. CONCLUSION

In the current study common clinical features were fever, abdominal pain and vaginal discharge. Proper patients counseling, hygienic atmosphere and other preventive strategies should be developed to decrease the maternal mortality caused by this preventable issue.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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