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Orignal Article

Need Of Icu In Obstetraical Complications

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ABSTRACT

Healthy and young women have no illness or disorder so they can progress their pregnancy and labour without any complications. **Objective:** To elaborate the role of the Intensive Care Unit (ICU) in Obstetric patients, their clinical properties, interventions, and the research results. **Method:** A Case-control study was performed to get the medical history of obstetric patients admitted to Hospital from 2018 to 2021. Aziz Bhatti Shaheed hospital, Gujrat, Pakistan. **Results:** From the patients admitted to Hospital, 87% out of 195 were kept on Ventilator. At the postnatal stage, there were no significant death rates were observed. Most of the admitted patients were 34-year-old, maximally survive for 53 days and minimally for one day only. Out of the total population admitted to hospital, 61% are with organ failure. The significant death rate of those patients is ~26%. Patients with gastrointestinal complications have the highest death rate. Haematological affected patients have a large number ~29%. **Conclusion:** In case of haemorrhage, hypertensive, sepsis, and infectious disorders, primary screening of patients is required before there is a need for ICU. The outcome of high-risk pregnant women is improved by increasing their alertness and stabilizing their condition before intervention is offered. Maternal morbidity could be reduced by improving the quality of care provided before and after being admitted to the ICU.

INTRODUCTION

Pregnant women are more likely to contract and develop thromboembolic, sepsis, and other infectious disorders due to the physiological changes during pregnancy [1]. Pregnant patients admitted to ICU have more severe complications associated with pregnancy. There is a need to observe these complications. As we know, different physiological variations are occurring in a pregnant woman so these variations are needed to be observed and on. Individuals suffering from obstetric are divided into main three categories. Individuals with puerperal sepsis, postpartum haemorrhage, thromboembolic infections, related to pregnancy are placed in the first category. Individuals affected with diseases that are a result of pregnancy like diabetes, cardiovascular disorders, high blood pressure are placed in the second category. the main reason for death and morbidity are chronic and acute diseases that cause pregnancy complications [2]. Immuno-compromised patients, which might have a serious affect in a non-gravid state but in pregnant women they are the major cause of high death rate are categorized into the third group. Hepatitis E during pregnancy is a common example of this case. The death rate of pregnant ladies is 20%, while non-pregnant ladies die at a rate of 1%. High incidence of premature labour and perinatal mortality are also due to hepatitis E [3]. Every year, ~5 million women in Pakistan get pregnant, with an estimated 500 maternal fatalities per 100,000 live births attributable to causes related to pregnancy. The death in women for whom the cause of death is uncertain, it could be higher in actuality. A strategy covering multidiscipline involving obstetricians, intensivists, and anaesthesiologists is required to handle such patients [4]. This study presents a critical illnesses overview that impacts the obstetric patients, focusing on the probable obstetrics and gynaecology-related risk factors that lead patients admitted to ICU, the therapy they are provided with, and the admission's results and

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monetary cost.

METHODS

In between January 2018 to December 2021, a case-control study of the patients with obstetric was conducted at Aziz Bhatti Shaheed hospital, Gujrat. The Aziz Bhatti Shaheed Hospital has a total of 577 beds, including fifty-five critical-care beds in the ICU, cardiac care unit, and neonatal ICU. If a patient suffers from respiratory complications it is admitted to ICU for further treatment. Doctors treating the patients and the ICU team decide whether there is a need to admit the patient to ICU or not. In this study, only patients admitted to ICU for one day were considered. According to the International Classification of Diseases, 9th revision, the cases ~ 603 to 67914 codes were also reviewed during this research. The patients admitted in ICU were pregnant or maybe they have delivered just 6 weeks before they were admitted in ICU are Obstetric patients [5]. For every case of this study, each diagnosis, treatment, and result were analysed. Demographic properties, Obstetric condition, ICU time duration, treatment, and results of treatment of the patient are collected as data for the study. WBCs and platelets count, normal red blood cells ratio, haemoglobin, and serum level data were collected from the laboratory. The primary screening of the patient was the condition that caused the critical complications. ICU analysis chart was observed to calculate the causative agent of death and death rate of Obstetric. Positive blood, urine, and pelvic tissue culture (collected at the time when patient is admitted) or histological analysis were used to determine the indication of sepsis infection [6]. The Ethics Committee of the Aziz Bhatti Shaheed hospital gave their approval to this study. Data of the patients collected for the study was organized by using MS Excel software. Data was transferred into a statistical tool of Software for Social Sciences 19th version, for further analysis. Categorical variables were represented in the form of numbers and percentages, whereas continuous variables were presented in the form of median and interquartile ranges. At the univariate level, For the identification of risk factors, the Chi-square test was employed. For multivariant analysis, logistic regression is used. Also calculated are the odds ratio and the 95 percent confidence interval. Statistical significance is considered if there is a two-sided p-value of less than 0.05 [7].

RESULTS

The results of the patients admitted to ICU are summarized in (Table 1). It has been observed that there is no statistical relationship between postnatal patients and the death rate [8]. One day is the minimum time for the patient to admit to ICU while 53 days are maximum enough. H1N1 pneumonia causes respiratory failure in the patient and acute disorders on the fifth postnatal day was admitted In ICU for 53 days. The patient died after spending one day on the ventilator. Approximate cost for the treatment of ICU patient for one day is $3300. In ICU, the admitted patient's death rate is 21.64%. Multi-organ failure was seen in 61% of patients hospitalized in the ICU. There were 32 percent heart related, 31 percent lungs disorders, 39 percent related to kidney, 23 percent gastric and intestinal, 20 percent Blood borne, 36 percent neurological abnormalities among them; 56 percent of patients had septic shock, 51 percent had a neural disorder, and 12 percent had a heart shock. Because of aesthetic disorder, the admitted patients in ICU are only 4.2 percent. There is an imbalance in the serum level, haemoglobin, WBCs count of patients as they were admitted to ICU. Laboratory outcomes and demographic properties of patients that were studied are described in Table 2 [9].

Varibles	Total n=194	Survived n=152	Expired n=42	Odd ratio [95%confidence interval
Primigravida	67	54(80.6%)	13(19.4%)	0.81[0.39-0.169]
Multigravida	127	98(77.2%)	29(22.8%)	
Pregnancy status				
Antenatal	72	57(79.2%)	16(21.5%)	1.03[0.51-2.07]
Postnatal	121	95(78.5%)	26(21.5%)	
Source of admission				
Emergency department	74	52(70.3%)	11(29.7%)	2.11[1.06-4.23]
Obstetrics and gynecology department	120	20(16.7%)	20(16.7%)	
Results are presented as n (%)				

Table 1: Patients admitted in ICU

Varibles	Median(IQR)
Age (years)	34.5(29-27)
Intensive care unit stay (days)	27(18-32)
Haemoglobin (11.1-14.5 g/dL)	9(7-10)
WBC (4.5-10.0 x 10^9L)	14(9.6-16.4)
Platelets (150-400 x10^9)	220(148-259)
Creatinine (0.6 to 1.1 mg/dL	4.3(3-5)
INR	10.4(7.2-12.2)
IQR: interquartile range; INR: international normalised ratio.	

Table 2: Laboratory outcomes of patients

Patients with cardiovascular, pulmonary, renal, endocrine, or haematological problems did not have significantly higher mortality rates. Patients with gastrointestinal disorder had a chance of a 5 times higher death rate (odds ratio=4.87; 95% confidence interval: 1.65–14.36). The haematological diagnosed patient had a significant highest ratio (28.4%) who were admitted to ICU [10]. Among those, most of them (41%) were suffering from obstetric haemorrhages. Placenta accretes (33 percent), uterine atony (27 percent), placenta previa (19 percent), placental

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abruption and retained products of conception (13 percent), cervical trauma and uterine rupture (11 percent), and pelvic trauma (2.8 percent) were the most common causes of obstetric haemorrhages. Patients with cardiovascular illnesses (24.23 percent), respiratory syndrome (12.37 percent), and pulmonary edema (62 percent) were all admitted due to pre-eclampsia because it is the main causative agent of these illnesses. The majority of patients who arrived with sepsis (20.1 percent) had puerperal sepsis (62 percent). Some of them have endometritis (14 percent), chorioamnionitis (5.9 percent), and mastitis (2.9 percent). Bacteria was the main reason for causing 70% of diseases. Table 3 summarises a comparison between co-morbidities in survivors and expired patients [11].

Obstetric complication	Total n=194	Survived n=152	Expired n=42	Odd ratio [95%confidence interval
CVS	48(24.7%)	40(26.3%)	8(19%)	0.66[0.28-1.54]
A. Periparttum cardiomyopathy	14(7.2%)	10(6.6%)	4(9.5%)	
B. Hypertensive disease of pregnancy	34(17.5%)	30(19.7%)	4(9.5%)	
1. Pre-eclampsia	27(13.9%)	24(15.8%)	3(7.1%)	
2. Gestational HTN	3(1.5%)	3(2%)	–	
3. Superimposed pre-eclampsia	4(2.1%)	3(2%)	1(2.4%)	
Respiratory	25(12.9%)	20(13.2%)	5(11.9%)	0.89[0.31-2.54]
A. Amniotic Fluid	1(0.5%)	0(0%)	1(2.4%)	
embolus				
B. Pulmonary edema	15(7.7%)	12(7.9%)	3(7.1%)	
C. ARDS	4(2.1%)	3(2%)	1(2.4%)	
Others	5(2.6%)	5(3.3%)	–	
GI	15(7.7%)	7(4.6%)	8(19%)	4.87[1.65-14.36]
A. HELLP	4(2.1%)	3(2%)	1(2.4%)	
B. Acute fatty liver	2(1%)	2(1.3%)	–	
C. Hepatitis E	9(4.6%)	2(1.3%)	7(16.7)	
Renal	15(7.7%)	12(7.9%)	3(7.2%)	0.89[0.24-3.34]
Proteinuria	7(3.6%)	6(3.9%)	1(2.4%)	
Others	8(4.1%)	6(3.6%)	2(4.8%)	
Endocrine–GDM	7(3.6%)	5(3.3%)	2(4.8%)	1.47[0.27-7.86]
Haematological	55(28.4%)	39(25.7%)	16(38.1%)	1.78[0.86-3.66]
Sepsis	39(20.1%)	31(20.4%)	8(19%)	0.92[0.82-2.18]
A. Pelvic sepsis	36(20.1%)	28(18.4%)	8(19%)	
B. Mastitis	3(1.5%)	3(2%)	-	

Data are expressed as n (%)
CVS: cardiovascular system GI: gestational diabeses mastitis:ADRS:
acute resporatory disress syndrome: HTN: Hypertention:
Hellp: haemolysis,elevated liverenzyme level, low Plateles level

Table 3: Summary of comparison between co-morbidities in survivors and expired patients

DISCUSSION

The patient number examined in this paper does not represent a representative sample of all obstetric women in the area or city who need ICU. Most of the population cannot afford ICU, therefore they were admitted to local hospitals or health centres for their treatment due to limited resources. In Pakistan, the rate of death during pregnancy is 200- 513 per lac births and high birth rate, these figures are likely underestimating obstetrical patients' need for ICU [12]. Because of obstetric haemorrhage or hypertensive illnesses of pregnancy Obstetric patients are frequently admitted to ICU, according to international epidemiology results over many years. Infections, unsafe abortion, and obstructed labour are some of the additional causes of high death rates in females in developing and under developing nations. After pregnancy haemorrhage (21.0 percent), high blood pressure (18.6 percent), septic shock (13.3 percent), miscarriage (11.0 percent), labour pain (8.7 percent), and many different factors were determined to be directly responsible for maternal death in Pakistan. The outcomes of this study also back up the most common severe illnesses bleeding (28.4 percent), hypertension (17.5 percent), and sepsis (20.1 percent) due to obstetrics. When previous findings from the AK Hospital were compared with the results of this study, it was found that the leading cause of maternal death, accounting for 25% of the 81 deaths was sepsis [13]. Higher rates of recurrent caesarean sections may result in obstetric, requiring peripartum hysterectomy as a result of an increased risk of bleeding. In the past medical history Patient with 3-4 caesarean sections, must have a chance of suffering from Percreta haemorrhage. Developing countries have the highest increased caesarean section rate. The incidence rate of placenta increta is directly increased with an increased rate of c-section. The ~22% death rate is reported in the study. Immunocompromised patients have a 5times higher death rate as compared to normal pregnant patients [14]. Unfortunately, young women with obstetrical risks are high are more likely to be infected with hepatitis. The disease is usually severe and has a high rate of fatality in pregnant women. Approximately 6.2 percent of patients are initially diagnosed with hepatitis when admitted to ICU. More than 19 percent of all new infections in Pakistan occur due to the Hepatitis A virus. Hepatitis C virus is on the first number. More than 12 percent of all acute ass were reported are due to Hepatitis E virus. The healthcare system has failed to adequately protect the public, even though Pakistan has all of the conditions for the transmission of hepatitis A and C. Hepatitis E can also be transmitted to a large population. Hepatitis E risk can be controlled by a vaccine that protects pregnant women. The first step to control hepatitis is to raise knowledge of the hepatitis E and A viruses as primary health threats. Providing contaminated free water, improving sanitary conditions, and boosting vaccines are the approaches to combat these diseases [15]. According to other research,

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at the time of labour, the mortality rate is significantly higher. Shortage of trained care providers, prenatal, intrapartum as well as postpartum care, and underutilization of hospitals and clinics are the main reasons death occurs during pregnancy. Home is the most common place for delivery of expected females, with a conventional birth attendant serving as the primary hospital professional doctors. Most of the complications develop at the time of delivery. For obstetric care, only one form twenty are admitted to hospitals. In Pakistan, the major causes of maternal death are lack of access to hospitals, unsafe delivery, higher fertility rate, and illiteracy [16]. There is a need to build a strong healthcare system to reduce these complications at the time of pregnancy. During antenatal care, delivery, and the screening of patients for referrals, there is a need for educated birth and health are the staff which plays a critical role [17].Varied health jurisdictions may have different proportions, severity, and access to ICU. Understanding the natural physiological changes that occur during pregnancy is essential for effective peripartum patient treatment. With proper medical care and treatment, the complications in immunocompromised patients can be reduced. It is critical to forming a multidisciplinary team to do this [18]. An examination of ICU admitted patients reveals the breadth and depth of the factors that contribute to maternal death. If the patient is provided with full care and health services, there are also chances of death occurring during pregnancy [19]. Pregnancy-related complications can be reduced by educating the families and pregnant women about their proper care in hospitals and their postpartum period. A big contribution could be made if healthcare facilities increase their vigilance and enhanced their training[20].

CONCLUSIONS

One way to reduce the death rate is to provide high-quality care to obstetric patients. As we know that a large number of women deliver at home due to a lack of resources and funds so the establishment of better health centres can also provide good care to these pregnant women. In the case of obstetric, ICU is also another option to treat the patients carefully with proper medical care. In immunocompromised patients, as they have many organs failing in their body, must be needed to be admitted to ICU for proper blood pressure control, Blood cell count. Within Health care departments and Hospitals, the data presented in this article is useful for counselling and resource distribution. This research data shows that the demonstration of expected females is at high risk and achieving optimal status stabilization before being subjected to intervention can provide better results.

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