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EVALUATING THE OUTCOMES OF POSTPARTUM INFECTIOUS COMPLICATIONS IN IRAQI WOMEN

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Abstract: Background: In the United States, there is not enough new data about how many infections after birth happen or how likely certain problems will be if they occur. In Germany, some research shows that about 10% of women who die while giving birth are killed by blood poisoning. Objective: This study is interested to determine clinical findings of postpartum infectious complications related to Iraqi women. Patients and methods: 88 women enrolled in different hospitals in Iraq for delivery or postpartum care and they were screened for their vital signs during this period. Any woman with a fever (> 38.0 °C) or body temperature (< 36.0 °C) had samples taken for urine culture and blood culture tests with symptom questionnaires. Data on demographics, treatment, and outcome after leaving the hospital was recorded for those who were treated due to febrile conditions or hypothermia cases. The primary audit point was post-delivery infection happening within the hospital. Results: Our study was enrolled clinical findings of women, which include Gestational age at delivery within (37 – 42 weeks) was the highest rate of cases which, include 71 patients, vaginal delivery had 62 cases and cesarean section had 26 cases, singleton got 87 cases, and twin got one case, duration of hospitalization was 2.5 ± 2.0 days, blood transfusion had 5 cases, no death cases, the common postpartum infectious complications was wound infections at the site of a cesarean section which include 9 cases. Conclusion: In summary, postpartum infection was uncommon, and cesarean birth was independently related with postpartum infection.

Keywords: : Postpartum infectious complications, Quality of life, Risk factors, and Postpartum pain.

Introduction

In recent decades, maternal mortality has become a very important problem to overcome by all the nations of the world, so much so that the WHO mentions that every minute that passes somewhere in the world, a mother dies, giving data even that there are more than 800 maternal deaths per day and mentions that in 2015 there were more than 300,000 deaths of this population group caused by complications of pregnancy, childbirth, and the puerperium. Despite these disappointing data, statistics at the Latin American and Caribbean level mention a reduction of this by 40% and at the national level by 43%. [1 – 5]

PAHO (Pan American Health Organization) has estimated that the global maternal mortality reported in pregnancy and childbirth in 2010 was between 500,000 and 600,000 deaths annually, and 80% of these deaths are the result of pathologies in the puerperium. [6]

PAHO also indicates that Ecuador is the second country in Latin America, surpassed by Chile, with the highest rate of cesarean sections because of the total annual deliveries; more than 41% are given surgically, and therefore, it does not cease to be a risk factor for puerperal infection, since there are favorable conditions for bacterial growth to develop. [7]

In the province of El Oro, during the year 2013, 36.81% of births were registered by vaginal delivery and 53.28% of births by cesarean section, and in the city of Machala, 35.98% of births were registered by vaginal delivery and 55.16% of births by cesarean section. [8]

Internationally, puerperal infection has rates ranging between 3 and 20%, with an average of 9%, while nationally, after a cesarean section, the most common complication is the infection that ranges between 19.7%, with a risk between 5 and 10 times higher than in a vaginal delivery. [9]

In Ecuador, puerperal sepsis occupies the 4th place among the main causes of maternal mortality due to direct obstetric causes, according to the statistics of the INEC 2013. However, there are no studies that identify this health problem in the province of El Oro. Therefore it becomes a priority to investigate it. [10]

It should also be emphasized that the death of mothers is a great indicator of a country's development, and if this indicator endures and grows over time, it reflects the poor interest that a State is giving for its nation and more knowing that this situation is very well preventable even avoidable [11,12,5,9,13]. In addition, the literature emphasizes us at the Peruvian level, the main causes of maternal death occur during the puerperium, and this is caused by complications that will occur during this period; the most frequent of causing this fatality are puerperal hemorrhages, others such as puerperal Infections, Postpartum Hypertension, and puerperal Psychiatric diseases, and being the most frequent cause of hemorrhage, uterine atony (82.4%). [14,15]

Methods

Study design

We performed a cross-sectional study of women admitted for delivery and postpartum care at different hospitals in Iraq, involving 88 participants employing the hospital's database of patients. Data from all of the participants was examined to determine which variables contributed to acquiring a fever as well as hypothermia while hospitalized.

Data collection

Women who were admitted to different hospitals in Iraq maternity wards to delivery or within six weeks following giving birth were considered for participation in the study. We recorded participants' vital indicators, including blood pressure, heart rate, respiration rate, and mouth

temperature, every 8 hours starting immediately after delivery. HIV testing was administered to participants who had not been tested with the infection in the six months prior to the test.

Sample size

The study showed that in had to include 88 participants, and the rate of infection had to be doubled, between 4% of pregnant women that had recently given birth up 9% among people who had caught HIV.

Sample collection

The research project designed a structured physical examination and a symptomatic questionnaire, which were given to all febrile > 38.0 °C or hypothermic < 36.0 °C patients. A structured interview and chart review were conducted for all febrile and hypothermic patients and a randomly selected sample of normothermic patients during the final discharge from the hospital. Random selection was carried out using an Excel random number generator instrument, with the intention of picking five normothermic participants for each febrile/hypothermic individual. The final analysis incorporated data from all participants, regardless of whether specific factors were missing. Gestational age was established by the last regular menstrual cycle as described by the subject or recorded in the chart. Miscarriages are categorized as pregnancy losses occurring at 28 weeks of gestation.

Results and Discussion

Table 1: Clinical and demographic characteristics of patients.

Characteristics	Number of patients [88]	Percentage [%]
Age		
< 25	14	15.91%
25 – 35	65	73.86%
> 35	9	10.23%
BMI, [Kg/m2]		
Underweight	11	12.50%
Normal weight	20	22.73%
Overweight	32	36.36%
Obesity	25	28.41%
Comorbidities		
Yes	32	36.36%
No	56	63.64%
Hypertension	9	10.23%
Urinary tract infection	7	7.95%
Diabetes	5	5.68%
Cardiac disease	3	3.41%
Renal disease	2	2.27%
Asthma	6	6.82%

Prior surgeries		
Yes	17	19.32%
No	71	80.68%
Smoking status		
Yes	9	10.23%
No	79	89.77%
Education level		
Primary	5	5.68%
Secondary	13	14.77%
College/university	14	15.91%
Post - graduated	56	63.64%

Table 2: Diagnostic findings of women.

Variables	Number of patients [n = 88]	Percentage [%]
Gestational age at delivery		
< 37 weeks	9	10.23%
37 – 42 weeks	71	80.68%
> 42 weeks	8	9.09%
Mode of delivery		
Vaginal delivery	62	70.45%
Cesarean section	26	29.55%
Number of pregnancies		
1	28	31.82%
2 – 3	47	53.41%
≥ 4	13	14.77%
Number of vaginal exams		
0 – 3	78	88.64%
> 3	10	11.36%
Type of pregnancy		

Singleton	87	98.86%
Twin	1	1.14%
Estimated duration of labor (mean hours, SD)	16.5 ± 15.0	
Post-Delivery Care		
Peri-Cesarean antibiotic prophylaxis received	86	97.73%
Urinary catheter placed	40	45.45%
Catheter days	2.0 ± 0.9	
Duration of hospitalization, days	2.5 ± 2.0	

Table 3: Identify clinical outcomes related to maternal and fetal.

Variables	Number of patients [n = 88]	Percentage [%]
Maternal findings		
Ruptured uterus	1	1.14%
Re-operation	1	1.14%
Blood transfusion	5	5.68%
Death	0	0.0%
Intensive care unit admission	0	0.0%
Maternal death within seven weeks	0	0.0%
Maternal chart		
Premature rupture of membranes	2	2.27%
Pre-eclampsia or eclampsia	0	0%
Puerperal sepsis	1	1.14%
Obstructed or prolonged labor	4	4.55%

Antepartum hemorrhage	1	1.14%
Chorioamnionitis	0	0%
Fetal and birth outcomes		
Stillborn	4	4.55%
Live birth	84	95.45%
Apgar score		
1-min Apgar score	8.3 ± 1.7	
5-min Apgar score	9.2 ± 1.4	
Birth weight (Kg)		
< 2.5	5	5.68%
2.5 – 3.5	60	68.18%
3.6 – 4.0	17	19.32%
> 4.0	6	6.82%

Table 4: Determine postpartum infectious complications for women.

Complications	Number of patients [n = 88]	Percentage [%]
Endometritis	3	3.41%
Wound infections at the site of a cesarean section	9	10.23%
Urinary tract infections	2	2.27%
Sepsis	1	1.14%
Mastitis	0	0.0%

Table 5: Assessment of overall quality of life for general health of women.

Items	QoL scale
Physical function	65.32 ± 12.89
Psychological function	54.28 ± 10.60
Social and emotional aspects	59.95 ± 5.88
Activity aspect	74.37 ± 6.74

Table 6: Conducting univariable logistic regression analysis of risk factors affected on women with postpartum.

Risk factors	OR	95% CI
Cesarean delivery	4.6	3.1 – 7.2
Number of days in hospital	1.5	1.1 – 1.9
Multiparous	0.9	0.2 – 1.0
Number of vaginal exams in labor	1.2	0.6 – 1.7
HIV-infected	0.8	0.7 – 1.0
Age	0.7	0.5 – 1.1
Wound infections at the site of a cesarean section	0.8	0.6 – 0.9

In our sample, the incidence in postpartum fever or hypothermia had been 6%, as well as a source of infection was identified in 48% of those with recorded fever or hypothermia, for a total of 2% of established in-hospital postpartum infections. The overall fever, along with illness incidence recorded here, is modest [16,17]. However, the most prevalent infection among our patients had postpartum endometritis, as well as among cesarean births, we found a 7% incidence, which is more than three times higher than estimates of high-resource settings (1.8-2.0%). [18]

A study conducted at Germany found the incidence of HIV is 21%, recorded into 73/478 (15%) women undergoing emergency cesarean birth had postpartum endometritis, over double the 7% rate stated here [19]. The reduced incidence of postpartum conditions is caused by changes in practice, antibiotic usage, and infection control protocols in Uganda. Furthermore, the other Uruguay research was published in 2011 [20], while fewer HIV-infected women got antiretroviral medication, which might have contributed to greater infection rates. Historically, HIV has been linked to an increased risk with postpartum sepsis, including endometritis. [21]

Other studies in Sub-Saharan Africa indicate postpartum endometritis around 1–17% of cesarean deliveries, and our 7% incidence fits within this broad range [22]. Though the rate reported here is modest, postpartum infection could get more frequent in Sub-Saharan Africa as cesarean birth rates rise and the incidence of nosocomial infections increases. In other European studies, postpartum

UTI rates are as low as 3% following cesarean birth, as well as 2% post-vaginal delivery. [23,24] Cesarean delivery was linked to a cumulative in-hospital postpartum infection result (confirmed diagnosis of UTI, endometritis, or bloodstream infection) [25]. In fact, at multivariable logistic regression models, cesarean delivery was independently related with each of the three results (fever/hypothermia, endometritis, and postpartum infection composite result), with adjusted odds ratios ranging from 2.8 to 3.7. This conclusion is consistent with previous observations that postpartum infection was three times more common after a cesarean delivery than after a vaginal birth. [25,26].

Conclusion

According to our investigation, endometritis, an overall postpartum infection outcome, and the probability of incident hospitalization postpartum fever/hypothermia are all independently correlated with cesarean delivery. Longer hospital stays, as well as fewer prenatal clinic visits compared to the recommended four, were significant risk factors in postpartum infection. It is essential to maximize efforts to lower the high percentage of cesarean births, increase prenatal care attendance, and shorten hospital stays and days spend with urethral indwelling catheters.

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