

Original Research Article

Evaluation of the consequences of early permission of mothers with cesarean delivery

Faranak Jalilvand¹, Maryam Sadat-Razavi^{1*}, Afshan Sharghi², Zahra Ghavami¹, Reza Izadi³

¹Department of gynaecology and obstetrics, ²Department of Community Medicine, ³Faculty of Medicine, Ardabil University of Medical Science, Ardabil, Iran

Received: 12 September 2021

Revised: 06 October 2021

Accepted: 14 October 2021

***Correspondence:**

Dr. Maryam Sadat-Razavi,

E-mail: m.sadat.r2020@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: In Iran, there is a high tendency to give birth by cesarean section, while about 75% of them are unnecessary and selective. In many hospitals in the country, mothers who have undergone cesarean section are permission 24 hours after the operation if they have stable vital signs and are in good general condition. The aim of this study was to evaluate the consequences of early discharge in mothers who underwent cesarean section.

Methods: This descriptive case-series study was performed on 400 pregnant women aged 18-40 years with a gestational age of 37 weeks and more who were admitted to the hospital in Ardabil city for cesarean section at year 2019. Patients without any preference were divided into two groups. The first group was discharged 24 hours and second group was discharged 72 hours after surgery. Individuals in both groups were followed up by telephone 1 and 6 weeks after permission. The relevant checklist was completed for all of them. Other necessary data were collected through a questionnaire containing demographic and clinical information.

Results: Two groups were matched in terms of age and body mass index. At one and six weeks after discharge; there was no significant difference between two groups in terms of fever, readmission, symptoms of infection and use of antibiotics.

Conclusions: The results of the present study showed that after cesarean section, if the patient's vital signs are stable, the patient can be discharged after 24 hours.

Keywords: Early clearance, Childbirth, Cesarean, Ardabil

INTRODUCTION

Cesarean is an abnormal childbirth in which the baby is removed by making an incision in the wall of the mother's abdomen and uterus. Cesarean is used in special situation where pregnant women are unable to have a normal childbirth for medical reasons. On average, 10% of deliveries in the world are performed by cesarean section. According to official statistics in Iran, about 25-35% of childbirth are by cesarean. While according to unofficial statistics, cesarean in Iran is five times more than other parts of the world.¹⁻² However, the world

health organization recommends that up to 15% of births be performed by cesarean, but the prevalence of cesarean is higher in many countries. About 30% of births in the United States and 46% of births in China are performed by cesarean.³ In Iran, there is a high tendency to give birth to a baby by cesarean. While in Europe, cesarean delivery accounts for 10 to 20% of deliveries. Cesarean in Iran has a significant increase and growth compared to natural childbirth, so that forty to sixty percentage of deliveries in the country are by cesarean, which is higher than the worldwide standard.^{4,5} The reasons for the steady increase in cesarean section rates are not fully

understood, but total reduction in the number of deliveries, increasing the average age of mothers, increasing prevalence of obesity among mothers, increasing prevalence of pre-eclampsia as well as previous cesarean, dystocia, fetal distress or breech display, which causes more than 85% of cesarean sections, is one of the main reasons for tendency to cesarean section.⁶ Studies show that cesarean delivery compared to normal delivery has many complications such as doubling risk of readmission in the first thirty days after delivery and mortality due to respiratory infection, bleeding and thromboembolism, also the incidence of bladder rupture is 1.4 cases per 1000 operations and the incidence of ureteral injury is 0.3 cases per thousand operations. Uterine infection after cesarean delivery has been relatively common and women with a history of cesarean have a higher risk of uterine rupture in subsequent pregnancies compared to normal delivery.¹ Post-partum and midwifery care has changed dramatically over the past fifty years and gradually, the number of hospital stays decreased from ten to fourteen days to 3.8 days in 1980 and 2.4 days in 1997.² Reducing patient costs, reducing health care costs, preventing nosocomial infections, and using hospital facilities for other patients are the main reasons for reducing maternal hospital stays, because women who undergo cesarean section include a large group of health care recipients, because these patients face physiological and mental stress in addition to surgery.⁷⁻¹⁰ At present, there is no consensus on the permission time of patients undergoing cesarean section, but most sources consider minimum discharge time to be two days. But studies are always aimed at reducing this time for more mother-child communication as well as reducing costs. However, early permission of some patients, especially high-risk patients and the patients with the low socio-economic status, may lead to the readmission as well as the intensive care.¹¹⁻¹³

In many gynecological hospitals in the country, including Ardabil province, mothers who undergo cesarean section are discharged if they have stable vital signs and good general condition during the next day's visit and this is despite the fact that no study has been done in this case so far, therefore, the aim of this study was to investigate the consequences of early discharge in mothers with cesarean section in Ardabil province.

METHODS

Study design and participants

This descriptive case series study was performed on 400 pregnant women who were admitted to Alavi hospital in Ardabil from April 2019 to Jan 2019 due to cesarean section.

Inclusion and exclusion criteria

All pregnant women aged 18-40 years with a gestational age of thirty-seven weeks and more were included in the

study. Pregnant mothers with a history of diabetes, cardiovascular disease, hypertension, preeclampsia, post-partum complications in previous deliveries and PROM were excluded from the study.

Sampling method

Sampling was performed non-randomly and easily from available patients and sequentially. Pregnant mothers without any preference were divided into two groups. Group one including 157 people and group two including 243 people. Group one was discharged one day after surgery and group two was discharged two days after surgery with stable vital signs, no bleeding and life-threatening symptoms and according to the physician's clinical examination. Individuals in both groups were followed up by telephone 1 and 6 weeks after discharge and the relevant checklist was filled out with information about fever, symptoms of surgical site infection (pain, redness, purulent discharge), use of antibiotics and readmission. Other data required by patients were collected through a questionnaire containing demographic and clinical information such as age and body mass index (BMI). BMI were classed in four groups less than 18.5 kg underweight, between 18.5-25 kg normal, 25-30 overweight and ≥ 30 obesity.

Statistical analysis

The collected data were analyzed using SPSS version 23 and independent chi-square test and t-test used to compare the results.

Ethically approval

This study ethically approved by Ardabil university of medical science ethical committee and registered by code IR.ARUMS.REC.1399.203.

RESULTS

The average age of patients was 29.77 ± 7.29 years and the average age of patients in group one 30.5 ± 7.25 years and in group two was 29.61 ± 7.32 years which the difference not statistically significant. The 50.5% of group I and 46.2% of group II patients were overweight and the prevalence of obesity in group II patients was 29.5% higher than group I with 17.6% which was not statistically significant as shown in the Table 1. Examination of patients after 1 week showed that the symptoms of site infection were slightly higher in group I patients with 10.8% than in group two patients with 8% which difference was statistically significant as shown in the Table 2. In study of the two groups 6 weeks after discharge, the results showed that the two groups did not differ significantly in terms of fever, readmission, infection symptoms and antibiotic use as shown in the Table 3.

Table 1: Frequency of BMI of patients in both groups.

BMI (Kg/m ²)	24 hours		72 hours		P value
	N	%	N	%	
<18.5	9	5.5	8	2.2	0.288
25-18.5	41	26.4	52	21.2	
25-30	79	50.5	114	46.2	
≥30	28	17.6	71	29.5	
Total	157	100	243	100	

Table 2: Evaluation of patients one week after discharge.

Groups symptoms		24 hours		72 hours		P value
		N	%	N	%	
Fever	+	2	1.3	3	1.6	0.756
	-	155	98.7	239	98.4	
Readmission	+	1	0.6	1	0.4	0.755
	-	156	99.4	242	99.6	
Symptoms of site infection	+	17	10.8	21	8.6	0.467
	-	140	89.2	222	91.4	
Taking antibiotics	+	153	97.5	232	96.3	0.309
	-	4	2.5	11	4.5	

Table 3: Evaluation of patients six weeks after discharge.

Groups symptoms		24 hours		Group two		P value
		N	%	N	%	
Fever	+	0	0	1	0.4	0.421
	-	157	100	242	99.6	
Readmission	+	1	0.6	2	0.8	0.833
	-	156	99.4	241	99.2	
Symptoms of site infection	+	4	2.5	7	2.9	0.842
	-	153	97.5	236	97.1	
Taking antibiotics	+	4	2.5	7	2.9	0.842
	-	153	97.5	236	97.1	

DISCUSSION

Researchers at Boston university community health center by examining more than 470 births that took place in years 1998 to 2003, they concluded that women who underwent cesarean of their choice were about 2.5 times more likely to be hospitalized in the first month after delivery.¹⁴ In addition, a study of 97000 deliveries which results was published in the Lancet journal showed that the higher number of cesarean deliveries in the hospital lead to the greater risk of premature birth, neonatal death, maternal death due to infection, bleeding and antibiotics. U.S researchers by study more than 7.5 million births between 1998 to 2001, showed that mortality rate in neonates born by cesarean was 1.7 per 1000 live births and in neonates born normal delivery was 0.62 per 1000 live births.¹⁵

In the present study, 400 patients were included in the study of which 243 were discharged two days after cesarean and 157 discharged 1 day after cesarean. There was no significant difference between the 2 groups in terms of age and body mass index. At a check-up 1 week after permission; there was no significant difference between the 2 groups in terms of fever, readmission, symptoms of infection and use of antibiotics. The same results were obtained in the study six weeks later. Therefore, it can be concluded that the 2 groups were not significantly different in terms of clinical outcomes. In 2012, Chiong et al a comparative study of first- and second-day permission cesarean patients, the results showed that satisfaction in the first group was 87.1% and in the second group 85.5%. Breastfeeding was 44.7% in the first group and 44.9% in second group. But the rates of depression and anxiety were similar in both groups 2 and 6 weeks after discharge.⁶ In present study, follow-up of patients 2 and 6 weeks after discharge clinically symptoms in both groups were not significantly different.

Another study by Brumfield et al aimed to evaluate the permission of infants and mothers 24 hours after delivery, showed that 98.5% of mothers at the first visit after discharge were normal for all examinations and 0.7% of them needed readmission due to infection. Also, 93% of newborns were normal in terms of all examinations and only 1.4% needed to be re-visited.¹⁶ In the present study the first follow-up was 1 week after discharge in patients who were permission 24 hours after surgery, 1.3% of patients had fever and 10.8% symptoms of surgical site infection. The 0.6% of patients needed readmission, which is consistent with the findings of Brumfield et al.¹⁶ Another study by Buchmann et al looked at the early permission of mothers after cesarean. The results of this study showed that 3 patients needed readmission after permission. 8.2% of them developed wound infection and 13.2% of these patients experienced some degree of wound pain. In the present study, two patients required readmission 2 days after permission at 6 weeks of follow-up and 7 patients had symptoms of surgical site infection.¹⁷

In the study by Mazimpaka et al 67.7% of patients spent fewer days in the hospital and 96.1% of them had no post-operative complications. In the present study, similar to the Mazimpaka study, patients 24 and 72 hours after discharge did not have significant post-operative complications.¹⁸

In about our study limitation, we can say that due to COVID-19 pandemic the referral of mother changed from onsite interview to call interview and during this call follow-up we invited women to come to the clinical examination if they had symptoms.

CONCLUSION

The results of the present study showed that the 2 groups of patients had no significant clinical complications at

follow-up 1 and 6 weeks after discharge. It can be said that if the vital signs are stable and there is no clinical complaint from the patient side, the patients can be discharged from the hospital 1 day earlier which cause to decreased costs of patients and hospital and also reducing hospitalized side-effects such as various infections in hospital.

ACKNOWLEDGEMENTS

Authors would like to thanks all of mothers who participants in this study and also Alavi hospital staff.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Rouse DJ, Spong CY. Williams obstetrics. 23rd ed. New. York: Mc Graw Hill. 2010;25-76.
2. National Center for Health Statistics. Longer hospital stays for childbirth. 2001;120-31.
3. Fasubaa OB, Ogunniyi SO, Dare FO, Isawumi AI, Ezechi OC, Orji EO. Uncomplicated caesarean section: is prolonged hospital stay necessary? East Afr Med J. 2000;7(7):448-51.
4. Reck C, Zimmer K, Dubber S, Zipser B, Schlehe B. The influence of general anxiety and childbirth-specific anxiety on birth outcome. Arch Womens Ment Health J. 2013;5(2):98-102.
5. Hildingsson I, Nilsson C, Karlström A, Lundgren I. A longitudinal survey of childbirth-related fear and associated factors. J Obstet Gynecol Neonatal Nurs. 2011;40(5):532-43.
6. Chiong P, Jin M, Zawiah S. Hospital Discharge on the First Compared with the Second Day After a Planned Cesarean Delivery: A Randomized Controlled Trial. Obstet Gynecol J. 2012;2(5):25-32.
7. Culp RE, Osofsky H. Effects of cesarean delivery on parental depression, marital adjustment, and mother-infant interaction. Birth J. 1989;1(6):53-8.
8. Hillan E. Short-term morbidity assimilated with cesarean delivery. Birth J. 1992;1(9):190-4.
9. Cox B, Smith E. Themother's self-esteem after a -rean delivery. Am J Matern Child Nun. 1982;7(2):309-14.
10. Chiong P, Jin M, Zawiah S. Hospital Discharge on the First Compared with the Second Day After a Planned Cesarean Delivery: A Randomized Controlled Trial. Obstet Gynecol J. 2012;2(5):25-32.
11. Jansson P. Early postpartum discharge. Am J Nun. 1985;9(5):547-50.
12. Birtun J. Efficacy of early newborn discharge in a middle-class population. Am J Dis Child. 1999;13(8):1-6.
13. Mercer R, Staintan M. Perceptions of the birth experience: A cross-cultural comparison. Issues Health Care Women Int J. 1984;5(2):29-47.
14. Rong Z, Liu H, Xia S, Chang L. Risk and protective factors of intraventricular hemorrhage in preterm babies in Wuhan, China. Childs Nerv Syst J. 2012;28(12):2077-84.
15. Khan R, Blum LS, Sultana M, Bilkis S, Koblinsky M. An examination of women experiencing obstetric complications requiring emergency care: perceptions and sociocultural consequences of caesarean sections in Bangladesh. J Health Popul Nutr. 2012;30(2):159-71.
16. Brumfield CG, Nelson KG, Stotser D, Yarbaugh D, Patterson P, Sprayberry NK. 24-hour mother-infant discharge with a follow-up home health visit: results in a selected Medicaid population. Obstet Gynecol J. 1996;88(4):544-8.
17. Buchmann E, Pillay N. Early discharge from hospital after caesarean section at Chris Hani Baragwanath Hospital. SAJOG. 2011;70(3):17-21.
18. Mazimpaka C, Uwitonze E, Cherian T. Perioperative Management and Outcomes After Cesarean Section- A Cross-Sectional Study from Rural Rwanda. J Surg Res. 2020;24(5):390-95.

Cite this article as: Jalilvand F, Sadat-Razavi M, Sharghi A, Ghavami Z, Izadi R. Evaluation of the consequences of early permission of mothers with cesarean delivery. *Int J Contemp Pediatr* 2021;8:1824-7.