

## CHARACTERISTICS OF WOMEN WITH CESAREAN SECTION DUE TO PLACENTA PREVIA AT NATIONAL HOSPITAL OF OBSTETRIC AND GYNECOLOGY IN 2020

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### ABSTRACT

**Objective:** Describe the clinical, subclinical, and resuscitation care after placenta previa operations at the National Hospital For Obstetric And Gynecology.

**Method:** Descriptive study design was used to recruited 149 women who had a cesarean section due to placenta previa at the department of resuscitation anesthesia in the National Hospital For Obstetric And Gynecology from January to September 2020. **Results:** The average age of pregnant women was  $32.5 \pm 4.9$  years old, mainly in the 22 to 35 years old group (71.1%); 23.5% of them had comorbidities; 40.9% get pregnant up to 3 times; 61.7% of them had ever a C-section. In the pregnancy, 42.8% of the women had preterm birth and 4.1% of them were pregnant with twins. While admitted to the hospital, 49% of women presented with vaginal bleeding and 34.9% of them were anemia; 57% of women had uterine contractions and most of them presented with an open cervix. Almost of

participants had completed placenta previa (85.2%) and 34.9% of them had Placenta Accreta. 63.1% of women had a cesarean section and preserved the uterus and 36.9% of them undergo surgery of hysterectomy. 43.6% of the women experienced severe bleeding and half of them had to have a blood transfusion, the average amount of transfusion was  $3.11 \pm 2.6$  units of blood. After surgery, 55% of pregnant women recovered well. **Conclusion:** Most of the women had better progress after surgery in terms of mental status, breathing, circulation, pain sensation. Health care staff should provide post-cesarean care for the woman with history of cesarean section due to placenta previa, pregnancy with comorbid diseases, placenta accreta, emergency surgery and women with severe bleeding pre-and post- surgery.

**Keywords:** after cesarean section, placenta previa, the National Hospital For Obstetric And Gynecology.

### 1. INTRODUCTION.

The placenta previa resulted a high rate of preterm birth due to premature bleeding, making it difficult to continue the pregnancy. One of the common indications in cesarean section is placenta previa. In the surgery, the risk of bleeding, difficult he-

mostasis and after surgery, bleeding may still happen life-threatening for the women. Complications that may occur during and after surgery are hemorrhage, uterine atony, hypovolemic shock and finally stop circulation, death [1]. Resuscitation care is intensive care, requiring the nurse to be professional, quickly and accurately assess the pregnant woman's condition, carefully monitor and follow-up the patient, then, the complications may be detected early. After surgery, notice and timely implementation of medical intervention from the doctor as

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well as the optimal nursing care intervention, thereby avoiding complications, especially those that severely affect the life of the woman. In order to describe the characteristics of the pregnant woman who had a cesarean section due to the placenta and the results of monitoring and providing care of the woman during the resuscitation care period, the researcher conducted the study with the objective to examine the clinical, subclinical and post-operative regression of women who underwent a cesarean section at the National Hospital For Obstetric And Gynecology

## 2. RESEARCH METHOD

### 2.1. Research settings, time and participants

**Research settings:** the department of resuscitation anesthesia in the National Hospital For Obstetric And Gynecology

**Research time:** from January to September 2020.

**Participants:** Women of all ages after cesarean delivery (emergency surgery, planned surgery). Except for pregnant women with infectious diseases (surgery in the Department of infected Obstetrics

### 2.2. Methods:

**Research design:** Descriptive study design

### Sample size and and sampling method

- Calculate the sample size according to the formula to determine a rate with  $p = 0.93$  (the rate of cesarean section due to placenta previa in 2019 was listed at the Department of Resuscitation anesthesia in the National Hospital For Obstetric And Gynecology). 95% confidence level and permissible error  $d = 0.05$ .

$$n = z^2(1 - \alpha/2) \frac{p \times (1-p)}{d^2}$$

The minimum sample size calculated was 130 women. In fact, the study took all 149 women who had cesarean section due to placenta previa during the study period.

- Sample selection method: convenient sample selection

**2.3. Methods of data collection:** Data were collected from patient medical records and direct monitoring of each woman, information was documented in the research records.

### 2.4. Measurements

- Classification of placenta previa was according to the diagnostic lab results.

- Uterine contraction was evaluated 2 levels of good and not good

- Pain level was assessed on VAS scale of 0 = painless; 1 to 3 = mild pain; 4 to 6 = moderate pain and 7 to 10 = severe pain

- Assess the status of pregnant women in pregnant period was based on weight, height, BMI calculation and WHO classification: BMI <18.5 is thin; 18.5-22.9 is normal and BMI ≥23 is overweight

- Classification of the women progress with good resuscitation: the time spent in the resuscitation room is less than or equal to 3 hours and without complications; Women with poor resuscitation progress are women who have been in the resuscitation room for more than 3 hours and have complications or no complications.

**2.5. Data analysis:** Data were analysed by software used in biomedical statistics. Research results were presented in terms of frequency, percentage, average. The related factors were determined using OR index with OR > 1 and within the 95% confidence interval of CI and  $p < 0.05$ .

### 3. RESULTS

#### 3.1. Characteristics of women with cesarean section due to placenta previa

**Table 1. General characteristics, comorbidities and pregnant history of participants**

Characteristics	n	Percentage
Age:		
Under 22	1	0,7
22 to 35	106	71,1
Above 35	42	28,2
The average age	32,5 ± 4,9 Min:19 Max: 44	
Body status before pregnancy:		
- Normal	114	76,5
- Thin	17	11,4
- Overweight, obesity	18	12,1
Number of previous pregnancies		
Not yet	20	13,4
1-2 times	68	45,7
≥ 3 times	61	40,9
There were comorbidities	35	23,5
Number of cesarean sections before		
- Not yet	57	38,3
- 1 time	37	24,8
- 2 times	49	32,9
- 3 times and above	6	4,0

The average age of the participants was  $32.5 \pm 4.9$  years, of which mainly the age group from 22 to 35 years old, accounting for 71.1%, the age group over 35 accounting for 28.2% and only 1 women in the group of under 22 years old, this woman was only 19 years old.

Before this pregnancy, most of the women were in a normal body status (76.5%), 11.4% of them were underweight, and 12.1% were overweight. 23.5% of women had comorbidities. 40.9% of women had ever had two or more pregnancies.

13.4% of pregnant women got pregnant for the first time. Regarding the history of cesarean section, 24.8% of women had one caesarean section, 32.9% had two cesarean sections, and 4.0% of women had 3 or more cesarean sections.

**Table 2. Clinical and subclinical characteristics of women before surgery**

Characteristics	n	Percentage
Gestational age:		
- Preterm	49	32,9
- Fullterm	100	67,1
Number of gestations:		
- One gestation	143	95,9
- Twins	6	4,1
Vaginal bleeding	73	49,0
Cervical:		
- Close	134	89,9
- Open	15	10,1
Uterine contractions:		
- With contraction	85	57,0
- No contractions	64	43,0
Blood pressure:		
- Normal	144	96,6
- Hypotension	2	1,3
- Hypertension	3	2,0
There are signs of shock	2	1,3
Anemia:		
- Reduced number of red blood cells	69	46,3
- Decreased Hb concentration	52	34,9
Ultrasound		
- Incomplete edge placenta previa	19	12,8
- Incomplete lower placenta previa	3	2,0
- Complete placenta previa	127	85,2
- Placenta accreta	52	34,9

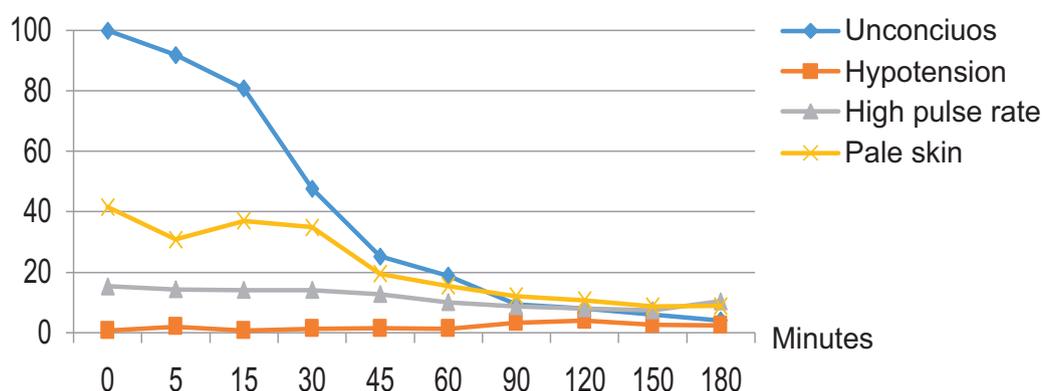
In this pregnancy, 4.1% of the pregnancy was twins and 32.9% of the woman had the preterm birth. While admitted to hospital, 49.0% of women had vaginal bleeding; 57.0% had uterine contractions and 10.1% of women had an open cervix. Before surgery, most women had normal blood pressure (96.6%) and 2 women had fast pulse, low blood pressure. The results of blood tests showed that 43.6% of women had a decrease in the red blood cell index and 34.9% of them had a decrease in hemoglobin. Most women had the complete placenta previa (85.2%) and 34.9% had a placenta accreta.

**Table 3. Indication of cesarean section due to placenta previa and surgery method**

Indication and surgery method	n	Percentage
Caesarean section and uterus preservation	94	63,1
Caesarean section and hysterectomy	54	36,2
Complete hysterectomy	1	0,7
<b>Total</b>	<b>149</b>	<b>100,0</b>

94 women underwent cesarean section and uterine preservation, accounting for 63.1% and 55 women undergoing cesarean section and hysterectomy, accounting for 36.9% of which 1 woman had a complete hysterectomy whose was with 17.2 week-pregnancy, 3rd child, old age, complete placenta previa and placenta accreta, no amniotic fluid; complete hysterectomy in controlling blood loss.

### 3.2. Results of monitoring and proving care of pregnant women after surgery



**Figure 1. mental status and circulation of pregnant women after surgery (n=149)**

Most women were conscious, stable blood pressure, normal pulse rate 3 hours after surgery.

**Table 4. Respiratory condition, uterine contraction and postpartum fluid at the time of follow-up**

	Percentage of women at any time								
	Min 0	Min 15	Min 30	Min 45	Min 60	Min 90	Min 120	Min 150	Min 180
<b>Respiratory condition</b>									
Ventilator	34.9	24.2	17.4	8.7	7.4	5.4	4	3.4	3.3
With endotracheal tube	57.7	0.7	0	0	0	0	0	0	0
Oxygen with nasal catheter	7.4	34.9	25.6	19.5	15.4	13.4	10.1	6	5.5
Spontaneous breathing	0	0	57	71.8	77.2	81.2	85.9	90.6	91.2
SpO2 (%)	96	98	98	98	99	99	100	100	100
<b>Uterine contraction (n=94)</b>									
- Good	98,9	98,9	98,9	96,8	96,8	97,8	97,8	98,9	
- Not good	1,1	1,1	1,1	3,2	3,2	2,2	2,2	1,1	
<b>Postpartum fluid (n=94)</b>									
- Normal	96,8	96,8	96,8	95,7	95,7	96,8	96,8	96,8	
- Much with bloody	3,2	3,2	3,2	4,3	4,3	3,2	3,2	3,2	

The results of women with mechanical ventilation decreased from 34.9% to 3.3% after 3 hours; the rate of women breathing through the endotracheal tube decreased from 57.7% to 0% after 30 minutes after surgery; the rate of women breathing on their own increased from 0% to 91.2% after 3 hours. Good respiratory support enabled capillary blood oxygen saturation with SpO2 always above 95% in all women. Most women were well progress, good uterine contraction and normal postpartum fluid ranged from 95.7% to 98.9%.

**Table 5. Amount of blood loss and blood transfusion after surgery**

Index	n	Percentage
<b>Blood loss:</b>		
- Less (<250ml)	7	4,7
- Medium (250- <500ml)	77	51,7
- Severe (500- <1000ml)	38	25,5
- Very severe (≥ 1000ml)	27	18,1
<b>Women with blood transfusion</b>		
- Yes	75	50,3
- No	74	49,7
Average units of transfused blood (n=75)	3,11 ± 2,6 (Min: 1 Max: 13)	

18.1% of women experienced very severe blood loss; 25.5% of women had severe blood loss and 51.7% had moderate blood loss. With the above blood loss, 75 women experienced a blood transfusion and the average amount of transfusion was 3.11 ± 2.6 blood units. Especially, women had to transfuse up to 13 blood units (for two operations).

**Table 6. Progress of pain sensation of women after surgery**

Grade of VAS	Hour 1 n=149	Hour 2 n=149	Hour 3 n=136	Hour 4 n=49	Hour 5 n=22	Hour 6 n=12
0	20 (13,4%)	19 (12,8%)	10 (7,4%)	8 (16,3%)	5 (22,7%)	4 (33,3%)
1-3	127 (85,2%)	95 (63,8%)	54 (39,7%)	13 (26,5%)	2 (9,1%)	1 (8,3%)
4-6	1 (0,7%)	32 (21,4%)	68 (50,0%)	27 (55,2%)	14 (63,7%)	6 (50,1%)
7-9	1 (0,7%)	3 (2,0%)	4 (2,9%)	1 (2,0%)	1 (4,5%)	1 (8,3%)

Pain level was assessed 1 hour after surgery and once an hour. The results indicated that in the first hour, the effect of anesthetic drugs caused less pain in pregnant women, and the later hours, pain level increased mainly on average.

**Table 7. Results of resuscitation care of women after surgery and related factors**

Results	n	Percentage
Resuscitation time:		
- In 3 hours	82	55,0
- ≥ 3 hours	67	45,0
Complications		
- No	125	83,9
- Yes and mild	17	11,4
- Yes and heavy	7	4,7
Results of resuscitation		
- Good	82	55,0
- Not good	67	45,0

55% of women had resuscitation before 3 hours; 45% had resuscitation from over 3 hours, of which 11 women (7.4%) had resuscitation more than 6 hours. The average resuscitation time was 3 hours and 52 minutes. Women were consciousness as early as after 2 hours and 20 minutes and women had the longest resuscitation time of 18 hours. Most women had no complications (83.9%); 17 women had mild complications and 4.7% (7 women) had serious complications, in which 3 cases of re-surgery for hemostasis suture, 3 cases of uterine hemostasis balloon and 1 placenta accreta woman with very severe bleeding before surgery, surgery resulting injured bladder, a total of 2000ml of blood transfusion and blood products. After surgery, blood clotting disorder, the recovery time was 10.5 hours. 14 women with complications of varying degrees had resuscitation time of more than 6 hours.

The results of general resuscitation included 82 women with well resuscitation (resuscitation time ≤ 3 hours and no complications) reaching 55%; 67 women had not good resuscitation (resuscitation time was over 3 hours with or without complications), accounting for 45%

**Table 8. Factors related to the resuscitation results**

Factors		Good resuscitation	Not good resuscitation	OR, 95%CI	p
History of cesarean section	Not yet	44	13	4,8 (2,28-10,12)	<0,01
	Had	38	54		
Comorbidities	No	70	44	3,05 (1,38-6,74)	<0,01
	Had	12	23		
Surgical type	Planned	38	20	2,02 (0,97-4,25)	<0,05
	Emergency	44	47		
Placenta previa	No placenta accreta	70	27	8,6 (3,72 – 20,63)	<0,01
	With placenta accreta	12	40		
The amount of blood lost	<500ml	68	16	15,4 (6,43-37,51)	<0,01
	≥ 500ml	14	51		

The results showed that the good resuscitation results were more common in women who had not had cesarean section before; no comorbidities; planned surgery; placenta previa without placenta accreta and low and average blood loss before and during surgery (less than 500ml).

#### 4. DISCUSSION

##### 4.1. General characteristics and pregnant history of women who had a cesarean section due to placenta previa.

The study results showed that the average age of the participants was  $32.5 \pm 4.9$  years, of which mainly the age group from 22 to 35 years old, accounting for 71.1%. This study result was similar to that of Pham Van Do (2018) while the pregnant woman's age was about 20-45 years old [2]. Nguyen Trung Kien (2019) showed that the proportion of women over 35 years old participating in the study accounted for 30.9% [5], it was similar to the study of 28.2%. The previous study results indicated

that the participants were at high risk in the age group over 35. Especially in the study there was a 19-year-old woman who was in very young age, which was not found in literature. Therefore, the results showed that the placenta previa was always a serious situation, the intervention should considerate to preserve the uterus for very young women.

The research results indicated that 11.4% of women were thin; 12.1% of women were overweight and 23.5% had other medical problems before getting pregnant. Most of the other studies [3], [4], [5] did not mention these two characteristics of pregnant

women, however, the research conducted to find out more of these 2 information. The further studies should conduct to examine the effects of body status and comorbidities to the postoperative recovery.

The research results indicated that the majority of study participants had ever been pregnant, from the 3rd time up, accounting for the highest percentage of 40.9%; 2 times (26.8%) and one pregnancy (18.8%). The research results were different from those recorded in the study of Le Thi Giang (2015) with the highest percentage of participants who had ever been pregnant once (67.4%) [3]. The group of participants who had never had a cesarean section before accounted for the highest proportion (38.3%), and ranked second was the group who had a cesarean section twice (32.9%). Participants with 3 times of cesarean section 3 times or more accounted for a low rate (4%). Regarding the group of participants who had never had a cesarean section, the research results were higher than the research results of Nguyen Lien Phuong (8.3%) [7].

#### **4.2. Clinical and subclinical characteristics of women with cesarean section due to placenta previa**

According to the research results, the rate of women with vaginal bleeding accounts for 49%. The research results were consistent with research results of Le Thi Giang (55.2%) [3]. The results were lower than that of Nguyen Trung Kien (67.9%) [5]. Most of the participants at the National Hospital for Obstetrics and Gynecology were appointed by doctors to stay in the hospital at full term, to take care of the overall health of the woman and fetus according to medical orders to detect and report to the doctor for early and timely intervention while there were signs of bleeding and labor to avoid vaginal bleeding, severe bleeding, which would be

dangerous for the fetus and women.

The rate of women with anemia before giving birth in the study was lower than that of the Le Thi Giang with anemia up to 60.5% [3]. From this result, it showed that anemia status of pregnant women was a problem of concern because it may affect the outcome of the intervention and the resuscitation status after the surgery.

Results of placenta previa ultrasound of the participants showed that the majority of women had the complete placenta previa (85.2%). This result was consistent with research results of some authors Pham Van Do (59.1%) and Pham Thi Linh (98%) [2], [6].

Regarding the handling of the placenta previa cases, the results showed that 94 women underwent cesarean section and uterine preservation, accounting for 63.1% and 55 women with cesarean section and hysterectomy, accounting for 36.9%. Among the women who had a hysterectomy, one woman had to have a complete hysterectomy due to excessive bleeding, severe blood loss (this woman had to transfuse 13 units of blood). She was very short gestational age of 17th week.

About blood loss, 43.6% of pregnant women had very severe bleeding (over 500ml). With such blood loss, 75 women had to transfuse blood and the average amount of transfusion was  $3.11 \pm 2.6$  units of blood. Especially, there were women who had to transfuse up to 13 units of blood, which was the case of emergency surgery due to placenta previa with placenta accreta. In the 3-unit blood transfusion surgery, 15 hours after surgery, the patient had to re-operate due to monitoring bleeding in the abdomen, continued extremely blood loss and continued infusion of 10 units. Our results were similar to those published by Le Hoai

Chuong showed that out of a total of 500 cases of placenta previa, hysterectomy was 42 cases, accounting for 8.4%. According to Hoang Van Yen (2010), research on the management of bleeding during and after cesarean section at the National Hospital for Obstetrics and Gynecology in 2008-2009, uterine artery constriction was selected in 86.9% of cases [8].

Regarding the results of regressive care and related factors: In the study, we analyzed and showed that women who had had a caesarean section; women with comorbidities; women who have both a striker and a toothpaste and those who have surgery in an emergency situation; women who lost a lot of blood before, during surgery had worse recovery results than women with advantages: no history of cesarean section, no associated disease, planned surgery and little blood loss. or medium. Our research results are consistent with research results of some other authors [9], [10]. These authors indicated that there was an association between cesarean section history, forward placenta characteristics, degree of blood loss, and time of resuscitation after cesarean section. The more women who have had a caesarean section before, the longer the time had consciousness and recovered from a cesarean section due to the placenta.

The resuscitation results and related factors indicated that the women with cesarean section, comorbidities, placenta previa with placenta accreta and emergency surgery; blood lost before and during surgery had worse resuscitation results than the women without previous cesarean section, comorbidities, placenta previa with placenta accreta and emergency surgery. Results of the research were consistent with the results of some other authors [9], [10]. This author pointed out that there was

a relationship between previous cesarean section, placenta characteristics, level of blood loss and resuscitation time after cesarean section. The higher number of previous cesarean sections made the longer the resuscitation time after caesarean section.

The following-up and detecting the heavy status after cesarean sections due to placenta previa is the task of the resuscitation therapist to track vital signs, monitor bleeding in the wound, bleeding in abdomen, signs of uterine contraction, monitoring postpartum fluid, monitoring transmission. Therefore, in the recsuscitation care, nurses should plan fully and properly intervention for the risk women with previous cesarean sections, placenta previa, placenta accreta blood lost before and during surgery and comorbidities.

## 5. CONCLUSION AND RECOMMENDATION

### Conclusion:

Characteristics of research participants results indicated that the women were average age  $32.5 \pm 4.9$  years; 40.9% of pregnant women had pregnant  $\geq 3$  times; 61.7% of women had ever had a C-section; while admitted to hospital, 49% of pregnant women had vaginal bleeding; 57% of women had uterine contractions and 89.9% had an open cervix; 85.2% of women had complete placenta previa (85.2%) and 34.9% of women had placenta accreta; 36.9% of women had a hysterectomy and 50.3% had a blood transfusion, the average amount of transfusion was  $3.11 \pm 2.6$  units of blood.

Most women had better progress after surgery in terms of mental health, breathing, circulation, pain sensation status. The results of good resuscitation care accounted for 55%. The rate of good resuscitation results was higher among women who had not

previously had C-section; no comorbidities; planned surgery; no placenta previa, no placenta accreta and not much blood loss

**Recommendation:** Providing care of women after cesarean section due to placenta previa, the nurses should pay attention to women who had a history of previous cesarean section, with comorbid diseases, emergency surgery; placenta previa, placenta accreta and extremely loss of blood before and during surgery.

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