Delivery Characteristic of Patients with Placenta Previa at Sanglah Hospital, Denpasar

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Abstract: *Placenta previa is one of the most serious complications during pregnancy and is associated with various maternal and fetal-neonatal complications. Risk factors for placenta previa that have been frequently mentioned in various studies are age, multiparity, multiple pregnancies, history of cesarean section, history of uterine surgery, history of use. assisted reproduction technology (ART), smoking, use of addictive substances, a history of maternal medical illnesses, and so on. This study aims to determine the prevalence and characteristics of patients with placenta previa at Sanglah General Hospital, Denpasar. This research is a retrospective descriptive study using secondary data. The research was conducted at IRD Obstetrics, Polyclinic Obstetrics, and Installation of Medical Records at Sanglah Hospital Denpasar, on January 1, 2018 - December 31, 2019. The incidence of placenta previa from a total of 1898 deliveries in 2018 to 2019 was 2.63%. The greatest maternal characteristics were mothers aged over 35 years, multigravida, non-referral, 28-36 weeks of gestation, no history of curettage, with a history of previous CS, a history of recurrent bleeding and a history of placenta previa in previous pregnancies.*

Keywords: placenta previa, delivery

1. Introduction

Antepartum hemorrhage is a condition of bleeding from the genital tract in the second trimester of pregnancy. The main causes of antepartum bleeding are placenta previa and placental abruption. Placenta previa is the term used to describe the implanted placenta covering the birth canal. Placenta previa is one of the most serious complications during pregnancy and is associated with a variety of maternal and fetal-neonatal complications.

The estimated global prevalence of placenta previa is 5.2 per 1000 pregnant women.[1] In an epidemiological study, it was found that the highest prevalence of placenta previa was in the Asian continent with a rate of 12.2 per 1000 pregnancies.[2] In a study in China, the prevalence of placenta previa was found to be 1.24% and it was found that the prevalence of placenta previa was stable. Kollman M's study in 2015 found an incidence of placenta previa 0.15%.[2,3] Although the prevalence of placenta previa is low, it remains a serious obstetric complication with a high case fatality rate (CFR).[1-4]

Placenta previa is a significant factor affecting maternal and neonatal morbidity and mortality. The majority of causes of maternal mortality and morbidity in placenta previa are bleeding (both antepartum and peripartum bleeding), anemia, sepsis, placenta accreta, emergency hysterectomy, and thromboplebitis. Massive obstetric hemorrhage in placenta previa is associated with poor maternal morbidity. Global mortality accounts for 30% of maternal deaths in Asia due to bleeding. In the Khirasaria and Nayak study in 2017, it was found that 86% of cases required blood transfusions and 43% of cases experienced shock, 33.3% of cases with postpartum hemorrhage, 3.33% of cases with placenta aderenes, where only 1 case of placenta previa accreta requires a hysterectomy.[5]

Significant maternal morbidity has also been reported in the form of increased incidence of fetal malpresentation, cesarean section, increased blood loss, and peripartum hysterectomy have been noted in cases of placenta previa and may result in prolonged maternal hospitalization. Globally, three million neonatal deaths have been reported and one of the causes of neonatal mortality is placenta previa. Neonatal mortality with placenta previa in that study was 6.66%, while previous studies had a rate of 10.7%.[6,7] There are several neonatal complications associated with placenta previa that are often associated with prematurity. Preterm birth can lead to high referrals to neonatal intensive care units and stillbirths.[3,6,8]

Several risk factors for placenta previa have been reported worldwide. Risk factors that have been frequently mentioned in various studies are age, multiparity, multiple pregnancies, history of cesarean section, history of uterine surgery, history of using assisted reproduction technology (ART), smoking, use of addictive substances, history of maternal medical illness, and so on.[8,9]

In addition to the many maternal outcomes that can be affected by placenta previa, several studies have reported multiple neonatal outcomes in patients with placenta previa. The reported neonatal outcomes include small gestational age, low birth weight, APGAR score <7 in the first 5 minutes, increased risk of NICU hospitalization, stillbirth, Respiratory Distress Syndrome, congenital anomalies such as spina bifida, Intra Uterine Growth Restriction (IUGR), Neonatal Jaundice, and Hypothermia.[10-12]

Based on the data above, which has reported various characteristics and outcomes in women with placenta previa, it attracted the attention of the authors to conduct a study on the prevalence and characteristics of patients with placenta previa at Sanglah Hospital Denpasar.

2. Methods

This research is a retrospective descriptive study using secondary data. The research was conducted at IRD Obstetrics, Polyclinic Obstetrics, and Medical Records Installation at Sanglah Hospital Denpasar, on January 1, 2018 - December 31, 2019. The sample of the study was all placenta praevia patients who gave birth and were recorded in the obstetrics IRD birth register book and the schedule of elective surgery at the Polyclinic. Obstetrics RSUP Sanglah Denpasar in the period 1 January 2018 - 31 December 2019 with complete medical record data.

The study was carried out recording the names and medical record numbers of the research samples from the obstetrics IRD labor register book and the schedule of elective surgery at the Midwifery Polyclinic in the period January 1, 2018 - December 31, 2019. After that, secondary data collection was carried out through the research sample through medical record records at the Hospital Medical Record Installation. Sanglah Denpasar. The collected data is then tabulated, analyzed, and presented in tabular and narrative form.

3. Result

This research is a retrospective descriptive study conducted at Sanglah General Hospital Denpasar by using secondary data taken based on the obstetrics emergency room birth register book and the elective surgery schedule for the Obstetric Polyclinic at Sanglah Hospital Denpasar. The study sample consisted of all mothers with placenta previa who gave birth and were recorded in the obstetrics emergency room delivery register and elective surgery schedule at the Obstetric Polyclinic Sanglah Hospital Denpasar during the period January 1, 2018 - December 31, 2019. A total of 50 samples with complete medical records were included in this study.

Characteristics of Research Samples
In Table 1, it is known that based on age characteristics, the most research samples were ≥ 35 years old, namely 19 samples (38.0%), followed by the 30-34 years age group as many as 17 samples (34.0%), the age group 25 -29 as many as 11 samples (22.0%) and the smallest group aged 20-24 years, namely as many as 3 samples (6.0%). Based on the number of pregnancies, most of the samples in this study were pregnant from 2 to 3, which was shown by 34 samples (68.0%), then followed by pregnancies ≥ 4, namely 12 samples (24.0%), and at least with the first pregnancy, as many as 4 samples (8.0%).

Based on the presence of a referral or not, most of the study samples came without a referral, namely as many as 34 samples (68.0%). Based on gestational age, most of the samples had a gestational age of 28-36 weeks, as many as 29 samples (58.0%), followed by 20 samples (40.0%) with gestational age ≥ 37 weeks, and one sample with less gestational age. of 28 weeks (2.0%). Based on the history of curettage, most of the samples did not have a history of curettage, namely 34 samples (68.0%), followed by a history

of 1 curettage as many as 13 samples (26.0%), and at least with a history of 2 times curettage as many as 3 samples (6.0%).

Based on the history of SC surgery, as many as 21 samples had no previous history of SC (42.0%), as many as 13 samples each had a history of SC 2 and 3 times (26.0% respectively), while the other 3 samples had a history of CS. SC ≥ 3 times (6.0%). Based on the history of placenta previa in previous pregnancies, it was found that 12 samples had a previous history of placenta previa (24.0%), 38 samples were found to have no history of placenta previa in previous pregnancies (76.0%).

Based on the history of recurrent bleeding placenta previa, it was found in 6 samples (12.0%), and as many as 44 other samples (88.0%) reported no recurrent bleeding. As many as 3 cases from the total data found adhesives (adhesives) at the time of surgery.

Characteristics of Placenta and Fetal Position
Table 2 describes the characteristics of the placenta and fetal position. Based on the type of placenta previa, most of the samples, as many as 47 samples had placenta previa totalis (94.0%), while the other 3 samples had placenta previa marginalis (3.0%). Most of the placenta is in the posterior position (64.0%). Most of the samples had no fetal location abnormalities (80.0%). A total of 10 samples had fetal location abnormalities, which were divided into 6 samples with a horizontal fetus (12.0%) and 4 samples with a breech location (8.0%).

Table 2: Characteristics of Placenta and Fetal Position

Characteristic	Total (n = 50)	Percentage (%)
Type Previa		
Totalis	47	94,0
Marginalis	3	6,0
Placenta position		
Anterior	18	36,0
Posterior	32	64,0
Fetal Position Abnormalities		
No	40	80,0
Yes		20,0 %
Horizontal	6	12,0
Breech	4	8,0

Table 1: Characteristics of Research Samples

Characteristic	Total (n = 50)	Percentage (%)	Mean ± Deviation Standard
Age			32,84 ± 5,7 years
20 – 24 years old	3	6,0	
25 – 29 years old	11	22,0	
30 – 34 years old	17	34,0	
≥ 35 years old	19	38,0	
Gestation			
1	4	8,0	
2-3	34	68,0	
≥ 4	12	24,0	
Referral			
Yes	16	32,0	
No	34	68,0	
Gestational age			35,04 ± 2,7 weeks
< 28 weeks	1	2,0	
28 – 36 weeks	29	58,0	
≥ 37 weeks	20	40,0	
History of curetage			
0	34	68,0	
1 x	13	26,0	
2 x	3	6,0	
History of caesar			
0	21	42,0	
1 x	13	26,0	
2 x	13	26,0	
≥ 3 x	3	6,0	
Recurrent bleeding			
Yes	6	12,0	
No	44	88,0	
History of placenta previa			
Yes	12	24,0	
No	38	76,0	
Adhesive placenta previa	3	6,0	

Maternal Outcome Characteristics
Table 3 describes the characteristics of the maternal outcome. A total of 24 samples underwent Cito SC surgery (48.0%), followed by 18 samples underwent elective SC surgery (36.0%), and 8 samples underwent SC Green Code surgery (16.0%).

Most of the samples had bleeding during surgery less than 1000 mL (56.0%), followed by 19 samples with bleeding from 1000-2500 mL (38.0%), and 3 samples with bleeding more than 2500 mL (6.0%). The mean amount of bleeding was 1024 ± 1026.9 mL. Most of the samples did not require blood transfusion (66.0%), while 17 other samples required blood transfusion (34.0%).

Based on the duration of treatment, most of the samples were treated for ≤ 4 days, as many as 38 samples (76.0%), followed by length of treatment ≥7 days (18.0%) and at least for 5-6 days (6%). The mean duration of treatment was 5.2 ± 5.7 days. Most of the treated samples did not require intensive room care (76.0%), while the other 12 samples required intensive room care (24.0%).

Table 3: Maternal Outcome Characteristics

Characteristics	Total (n = 50)	Percentage (%)	Mean± Deviation standard
Treatment			
Elective SC	18	36,0	
Cito SC	24	48,0	
Green CodeSC	8	16,0	
Durante OP Bleeding			1024 ± 1026,9 ml
< 1000 ml	28	56,0	
1000 – 2500 ml	19	38,0	
> 2500 ml	3	6,0	
Blood transfusion			
Yes	17	34,0	
No	33	66,0	
Length of treatment			5,2 ± 5,7 hari
≤ 4 days	38	76,0	
5 – 6 days	3	6,0	
≥ 7 days	9	18,0	
Intensive room			
Yes	12	24,0	
No	38	76,0	
Other organ damage			
Yes	3	6,0	
No	47	94,0	
Relaparotomy			
Yes	0	0	
No	50	100	
Death			
Yes	0	0	
No	50	100	

Most of the samples, as many as 47 samples (94.0%) did not experience other organ injuries during surgery, while 3 samples had organ injuries (6.0%). No sample underwent relaparotomy and no sample died (100%) in this study.

Based on Table 4, bleeding during surgery was the least and most commonly found in the SC cito group with proportions of 57.1% and 100%, respectively. A total of 7 subjects (41.2%) from the Cito SC group required blood transfusions, while the least blood transfusion needs came from the elective SC group, namely 4 subjects (23.5%). Based on the length of stay in the ICU, as many as 6 subjects (75%) from the Cito SC group were treated for 3-5 days. The longest duration of ICU stay was 9 days and came from the Cito SC group (100%).

Table 4: Distribution of bleeding during surgery, transfusions and length of stay in the ICU based on the type of action

Karakteristik	Treatment		
	Cito SC N (%)	Green code SC N (%)	Elective SC N (%)
Durante op bleeding			
< 1000 ml	16 (57,1)	3 (10,7)	9 (32,1)
1000 – 2500 ml	6 (31,6)	5 (26,3)	8 (42,1)
> 2500 ml	3 (100,0)	0 (0,0)	0 (0,0)
Transfusion			
Yes	7 (41,2)	6 (35,3)	4 (23,5)
No	17 (51,5)	2 (6,1)	14 (42,4)
ICU length of stay			
1-2 days	0 (0,0)	2 (66,7)	1 (33,3)
3-5 days	6 (75,0)	1 (12,5)	1 (12,5)
6-10 days	1 (100,0)	0 (0,0)	0 (0,0)

Characteristics of Infant Outcomes

Table 4.5: Characteristics of Infant Outcomes

Characteristics	Total (n = 50)	Percentage (%)	Mean± Deviation Standard
Sex			
Male	23	46,0	
Female	27	54,0	
Birth weight			2613, 18 ± 586,7 gram
1500 – 2499 gram	18	36,0	
2500 – 3999 gram	32	64,0	
APGAR score			
Vigorous	34	75,0	
Moderate asphyxia	5	12,0	
Severe asphyxia	6	13,0	
IUFD			
Yes	5	10,0	
No	45	90,0	

Table 5 describes the characteristics of the infant's outcome. Most of the babies were male (54.0%). Based on birth weight, most babies were born weighing 2500-3999 grams (64.0%), while the rest were born weighing 1500-2499 grams (36.0%). The mean birth weight of babies was 2613.18 ± 586.7 grams. Based on the APGAR score, most of the babies were born vigorous (68.0%), followed by severe asphyxia (12.0%) and moderate asphyxia (10.0%).

A total of 5 babies experienced KJDR (10.0%).

Based on Table 6, most babies were born from the SC Cito group, with the most vigorous distribution coming from the SC Cito group (50.0%) and the least coming from the SC green code (3.0%). Five babies were born with moderate asphyxia from the SC Cito (40.0%), elective SC (40.0%) and SC green code groups (20.0%). Six babies (100%) were born with severe asphyxia from the SC Green code group and no babies with severe asphyxia were born from the cito SC group (100%) and elective CS (100%).

Table 4.6: APGAR score distribution based on Type of Treatment

APGAR score	Treatment		
	Cito SC N (%)	Green code SC N (%)	Elective SC N (%)
Vigorous	17 (50,0)	1 (3.0)	16 (47.0)
Moderate asphyxia	2 (40,0)	1 (20,0)	2 (40,0)
Severe asphyxia	0 (0,0)	6 (100,0)	0 (0,0)

4. Discussion

The incidence of placenta previa from a total of 1898 deliveries in 2018 to 2019 was 2.63%. This proportion is still below the proportion of global prevalence which reports that the prevalence of placenta previa reaches 5.2% with the highest rate found in Asian races.[3] Meanwhile, other studies reported variations in the incidence of placenta previa, ranging from 0.2% to 1.9%. Other studies have had a smaller incidence of 0.15% of a total of 328 samples.[13] In another study using a larger sample, it was found that the incidence of placenta previa was close to the percentage of this study, which was an average of 1.7% of the 30,323 research samples experiencing placenta previa.[14] In another study in 2017, it was found that the incidence of placenta previa was higher, reaching 3.9%.[15] This trend of increasing incidence may be due to an increase in the number of cesarean sections and an older mother's age in the first pregnancy.[16] In addition, other factors may also be due to the fact that most cases of complicated pregnancies are referred to RSUP Sanglah Denpasar as a tertiary referral hospital.

In this study, it was found that the largest percentage of the sample was more than or equal to 35 years (38%), with a mean age of the sample as a whole was 32.84 ± 5.7 years. In the study by Killici et al, reported similar results, namely that the average age of women who experienced placenta previa was 30.7 ± 5.6 years.[15] Another study with similar results was that 57% of patients with placenta previa were over or equal to 35 years of age.[13] Other studies support our findings, that the incidence of placenta previa was found to be significantly higher in women over or equal to 35 years of age.[3,16] In the research of Senkoro et al.,[17] it was found that the age range of mothers with placenta previa was slightly younger than in the study sample, namely the average age was 29.07 ± 8.12 years. Several microscopic studies have found extensive placental infarction in older pregnant women. To maintain optimal uteroplacental blood flow, a larger surface area is required for the placental implantation site. This can then lead to placenta implantation extending to the lower uterine segment.[18]

Most of the study samples were mothers with multigravida pregnancies (92%), with details of 34 samples (68%) being mothers with second or third pregnancies, and as many as 12 samples (24%) were mothers with pregnancies equal to or more than four. In a 2015 study, it was found that most of the patients with placenta previa were patients with multigravida pregnancies more than or equal to 5 times.[17] In several studies, it was found that multigravida is a risk factor for placenta previa. In the research of Senkoro et al[17] it was found that women with multiparous had a 4.85 times greater risk of experiencing placenta previa. Mothers with pregnancies of more than or equal to 5 times had a 5-fold increased risk of developing placenta previa. The increased risk of placenta previa in multigravida women may be explained by changes in uterine vascularization that lead to decreased perfusion of the placenta and an increased likelihood of placenta implantation in the lower segments.[3,17] In addition, a large placenta also increases the risk of expanding placenta implantation to the lower uterine segment, as in patients with multiple pregnancies.[19]

Most of the samples in this study were non-referral patients (68%). Most of the non-referral patients reside in Denpasar City. Meanwhile, referral patients (32%) were on average referrals from Obstetrics and Gynecology Specialists (SpOG) from type C and type B hospitals. In this study, it was found that most of the sample's gestational age ranged from 28 to 36 weeks (58%). In addition, there was 1 sample (2%) with a

gestational age of less than 28 weeks. The mean gestational age in this study was 35.04 ± 2.7 weeks. Matsuda et al in a study involving 242,175 births obtained similar results where the mean gestational age for delivery with placenta previa was 35.1 + 3.2 weeks.[20] In the 2020 study, it was found that the gestational age of most patients with placenta previa was in the range of 32 to 35 weeks.[3] In the study of Killici et al.,[15] it was reported that the mean gestational age of patients with placenta previa was lower, namely 30.7 ± 5.6 weeks. This can occur because at> 35 weeks of gestation when the baby's lungs are considered mature, it is preferable to do pregnancy termination rather than conservative treatment. Most of the samples had no history of curettage (68%). A total of 3 samples (6%) had a history of curettage twice. The results of a recent study also obtained similar results, as much as 68% of women with placenta previa did not have a previous history of curettage.[21]

Most of the cases were pregnant women with placenta previa totalis (94%), while the other 3 cases (6%) were placenta previa marginalis. Research in 2013 obtained similar results, where the prevalence of placenta previa totalis was found to be higher in mothers with placenta previa, with a percentage of 59.1%.[22] Research in 2020 obtained different results, the prevalence of placenta previa totalis was reported to be smaller, namely 18%, while the prevalence of placenta previa marginalis was found to be greater, reaching 81.15%.[3] Another study found that 23% of patients with placenta previa had posterior placentations.[23] This can occur because it is easier to recognize placenta previa totalis than placenta previa parsialis and marginalis from physical examination or ultrasound.

In a previous study by Sekiguci et al[22] it was found that 19.1% of women showed an anterior placenta and 80.9% had a posterior placenta. This high number indicates that placental tissue develops more easily on the posterior uterine wall in placenta previa. The incidence of placental migration is higher and the rate of migration is faster in women with placenta previa anterior resulting in deeper adhesions in the anterior position. In addition, compared with the posterior placenta, the position of the anterior placenta was reported to be associated with multiparity and a history of more than two cesarean sections. Meanwhile, the posterior placenta position usually occurs in nulliparas with a history of cesarean section less than 2 times. There was no association between curettage and placenta anterior or posterior positions.

Most of the samples had the placenta in a posterior position (64%). In this study, only a few patients experienced massive bleeding, perhaps it could be affected one of them because most of the placentations were in the posterior position. In a retrospective cohort study of placental position involving 414 patients with placenta previa, 65.9% of patients had the placenta positioned posterior to the uterus. Research on primigravida women obtained a higher posterior placentation location (94.7%), as did multigravida samples (90.2%).[23] Whereas the position of the placenta in the anterior was significantly higher in the group with a history of CS more

than 2 times compared to patients without a previous history of SC.[24] Another study found that the prevalence of patients with an anterior placenta position was generally 19.1% (Sekiguchi et al., 2013). Several studies suggest that localization of the placentation in the anterior position increases the incidence of massive bleeding, massive transfusions, placenta accreta and hysterectomy.[25]

Fetal defects were found in 10 of 50 samples (20%), of which 6 cases were transverse, and 4 cases were breech. In another study involving 771 placenta previa patients, 19.8% of cases had fetal location abnormalities.[26] Research in 2016 reported that the proportion of fetuses experiencing malposition was 4.5%.[17] Placenta previa triggers a position abnormality with a higher finding at the latitude position.[17] Fetal defects in placenta previa patients occur because the abnormal placement of the placenta can prevent the fetus from occupying its ideal position in the uterus.[27]

Maternal outcome characteristics are shown in Table 4.3. The mode of delivery for the whole sample is by cesarean section where most of the samples underwent cito SC (48%). Of the 24 cases of cito SC, all were performed because of active bleeding. Meanwhile, of the 8 cases of SC green code, 6 of them were performed because of fetal distress, and the remaining 2 were due to active bleeding. In the 2014 study, there was a difference in the percentage of modes of delivery, where in that study, both primigravida and multigravida women mostly underwent elective SC (57.1% and 52.4% respectively). In a study conducted by Ruiter et al involving 214 placenta previa patients, it was found that as many as 57% of cases survived to term gestation and performed elective SC at a mean gestational age of 38 weeks 5 days. Meanwhile, as many as 43% of cases had to undergo a SC emergency, at an average gestational age of 35 weeks 3 days, with indications of active bleeding (55%), early onset of labor (35%), and fetal distress (10%).[28] A greater percentage of SC emergencies was also reported in one study, where the proportion was 75.6%.[29]

Of the 50 cesarean sections performed, the total variation of bleeding during the operation was obtained, ranging from 300 - 5000 ml, with a mean of 1024 ± 1026.9 mL. Most of the samples (56%) had bleeding <1000 mL and 3 samples with the amount of bleeding> 2500 ml. All three cases were patients with adhesive placenta. The massive bleeding that occurs due to placenta previa can put the patient in an emergency condition that requires transfusion and even hysterectomy.[3] Another study reported slightly greater results, where the mean bleeding during surgery was 1260 mL.[17] In another study reported a smaller mean bleeding volume, namely 690.16 ± 597.3 mL.[23] In a retrospective study in the United States involving 77 placental adhesive patients, the number of bleeding ranged from 2000 to 7800 ml, with a median blood loss of 3000 ml.[30]

Most of the samples did not require blood transfusion (66%). Meanwhile, 34% of the samples received blood transfusions during hospitalization, both during surgery and after surgery. The number of blood bags given varied from at least 1 bag of

PRC blood to a maximum of 10 bags of PRC. Blood transfusions were given to 3 patients with bleeding <1000 ml, and 14 patients with bleeding> 1000 ml. In the study Adere et al reported results similar to our study, most patients did not require blood transfusions (59.7%).[12] Kollman et al in a study involving 328 placenta previa patients found that 32.2% of patients with placenta previa major (placenta previa totalis or parsialis) required blood transfusions.[13] The number of blood bags given is directly proportional to the amount of bleeding that occurs. In our patients, a complete blood count 6 hours post SC was performed. Transfusions are given when postoperative Hb <8 g / dL, with a target of> 8 g / dL. In some cases, transfusions are also given by the anesthetist during the operation.

Most of the patients (76%) were treated for <4 days. The length of treatment for patients ranged from 2-27 days, with a mean of 5.2 ± 5.7 days. Patients hospitalized for> 7 days were patients who also required treatment in the intensive care unit for> 3 days, including patients with other organ injuries, and patients who received blood transfusions> 5 bags. Another study supports our findings, that the majority of mothers with placenta previa (68%) were treated in less than 14 days.[12] In other studies, obtained different results, the average duration of hospitalization for patients with placenta previa was more than 4 days.[17] In this study, the days of treatment for elective SC patients were counted from 1 day before surgery, while for patients who underwent cito or green code, the days of treatment were counted from the day of surgery. If there are no complications during the postoperative or postoperative days, the patient will be discharged on the second postoperative day.

Most of the patients did not require intensive care (76%). Twelve patients (24%) required intensive care with an average length of stay of 3.2 days. The proportion of patients admitted to the intensive care unit in this study was much higher than in other studies with a sample size of 1522,[21] where the reported proportion was very low at 0.5%. However, this can be influenced by the small sample size in this study. In a 13-year study in Saudi Arabia involving 55,862 births, 11.3% of 230 placenta previa patients were admitted to the intensive care unit as a result of massive bleeding, hypovolemic shock, and blood transfusions of more than 6 PRC bags.[31] In our study, patients who received intensive care were patients who also received blood transfusions of at least 3 bags. A total of 4 cases with bleeding> 3500 ml required treatment in the intensive care unit for 5 days before returning to the usual care room.

Most of the samples had no other organ injury during surgery (94%). Three of the 50 samples (6%) had other organ injury during surgery, with all samples having ruptured bladder. All cases with other organ injury during surgery were seen in patients with placenta praevia adhesive (3 cases of placenta increta). Another study in Saudi Arabia involving 306 placenta previa patients found that 12 patients (3.92%) had urinary tract injuries during surgery, where 11 patients had bladder injuries, and 1 patient had ureteral injuries.[32] Another study found a higher prevalence for bladder injury, reaching 13.9%.[8] Bladder injury usually occurs upon relieving adhesions between the uterus and the bladder, especially in patients with placenta percreta or patients with a previous history of CS. Injury to the ureter can occur during a hysterectomy, when massive adhesions or bleeding make it difficult for the operator to identify the ureter.

None of the patients underwent relaparotomy in this study. In a study conducted in Brisbane involving 65,188 births, there were 40 cases of adhesive placenta, of which 5 out of 40 cases (12.5%) underwent relaparotomy.[33] Patients with suspected intra-abdominal bleeding usually have signs of acute abdomen with hypovolemic shock or decreased Hb levels, in the absence of active vaginal bleeding. On ultrasound examination, a free fluid image can be found. Exploratory relaparotomy was performed to prove suspicion of intraabdominal bleeding, to find the source of bleeding, and to stop the bleeding. No sample died in this study. Other studies with a larger sample size obtained similar results, where maternal mortality was 0%.[5,21] Globally, data on maternal mortality are reported to be 0.3-1.3% in patients with placenta previa.[34]

As many as 27 out of 50 (54%) babies born were female. Other studies obtained similar results, most of the babies born were female (60.7%).[23] A study in Israel involving 771 placenta previa patients from a total of 185,476 births obtained different results, as many as 52.9% of babies born to placenta previa patients were male.[26] A meta-analysis study found that women with placenta previa delivered more babies with male sex than female gender. This is thought to be related to early & late insemination during the menstrual cycle, which increases the likelihood of conception of a male fetus as well as the likelihood of placenta implantation in a lower area. In the early insemination state, the embryo is thought to have reached the lower uterine segment while the endometrial lining is still not ready for implantation. Whereas in late insemination, the ovum is thought to have reached the lower segment of the uterus when it was fertilized. Both of these conditions can cause the placenta to implant in the lower uterine segment.[9]

Most of the babies (64%) were born with a weight range of 2500 to 3999 grams. A study conducted by Rosenberg et al in 771 placenta previa patients also obtained similar results, where it was found that 46.1% of babies were born weighing 2500-4000 grams.[26] The mean birth weight of infants in our study was 2388.51 grams. This figure is consistent with the mean gestational age of our study sample of 35.0 weeks. From the Lubchenco curve, the 50th percentile of a baby's body weight for 35 weeks of gestation is 2300 grams. Other studies have also obtained similar results, namely the mean weight of babies born to mothers with placenta previa is around 2670 ± 560 grams.[23] There were five babies (10%) who died in the womb (KJDR). The smallest baby born is 650 grams, born at 25 weeks of gestation. Other babies who died in the womb were babies born weighing 700-750 grams, at 28-30 weeks of gestation, with suspicion of intrauterine growth restriction (IUGR).

Most of the babies were born vigorous (75%). Meanwhile, 5 others were born with moderate asphyxia (12%) 6 with severe asphyxia (13%) with 5 babies dying in the womb. The results of other studies support our findings, namely that the mean APGAR score at the first and fifth minutes of the mean shows the vigorous category score (8.39 ± 1.28 and 9.41 ± 1.28, respectively). In another study, the proportion of neonates with an APGAR score of less than 7 at the first and fifth minutes was 22.3% and 5%, respectively. The high mean APGAR score can be influenced by localization of the placenta, which is predominantly posterior. Childbirth of infants is made easier by localization of the posterior placenta because of the low risk of injury or injury caused during SC procedure.[23]

5. Conclusion

The incidence of placenta previa in Sanglah Hospital Denpasar was 2.63%. The highest number of mothers aged over or equal to 35 years (38.0%), followed by the most characteristics, namely multigravida (92.0%), non-referral (68.0%), 28-36 weeks of gestation (58 , 0%), no history of curettage (68.0%), and with a history of previous CS (58.0%), a history of recurrent bleeding (12.0%) and a history of placenta previa in a previous pregnancy (24.0%). Most of the placenta was placenta previa totalis (94.0%) with a posterior placenta (64.0%) and without fetal location abnormalities (80.0%).

Maternal outcome characteristics were most undergoing cito SC (48.0%), bleeding <1000 mL (56.0%), no need for blood transfusion (66.0%), duration of treatment <4 days (76.0%) , no need for intensive care (76.0%), no other organ injury (94.0%), no need for relaparotomy (100.0%) and no one died (100.0%). Durante op hemorrhage was the least and most common in the SC cito group (57.1% and 66.7%, respectively). The greatest need for transfusion came from the SC cito group (41.2%). The longest ICU care came from the cito SC group (100.0%). Outcome characteristics of infants were that most babies were born female (54.0%), weight 2500-3999 grams (64.0%), vigorous APGAR score (75.0%) and without KJDR (90.0%). Most vigorous babies came from the SC cito group (50.0%) and severe asphyxia babies came from the SC Green code group (100%).

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