Clinical Characteristics and Risk Factors Analysis for Severity of Morbidly Adherent Placenta at Persahabatan General Hospital in 2015-2018

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Abstract
Background: *Morbidly adherent placenta is a condition which placenta adheres and invades deeply into the myometrium and, in some cases, until uterine serosa, thus contribute to peri-partum hemorrhage and significant maternal mortality.*
Purpose: *To identify prevalence, clinical characteristics and their odds ratio to increasing se-verity of morbidly adherent placenta case in RSUP Persahabatan from 2015 to 2018*
Methods: *Cohort retrospective study*
Results: *From 2015 to 2018, prevalence of morbidly adherent placenta was around 0.8%. The risk factors which contribute to increasing severity of morbidly adherent placenta were: age above 35 years (OR 1.6, 95% CI 0.41-6.24) and history of Caesarean section more than 2 times (OR 1.63, 95% CI 0.41-6.46). The presence of increasing severity of morbidly adherent placenta were related to volume of blood loss more than 1000 ml during surgery (OR 2.13, 95% CI 0.52-8.76).*
Conclusion: *The prevalence of morbidly adherent placenta at Persahabatan General Hospital in 2015-2018 was 0.8%. Age, history of Caesarean section more than 2 times, volume of blood loss, and duration of surgery were not statistically associated with adherent placenta case.*
Keywords: *Adherent placenta, accreta, increta, percreta.*

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Karakteristik Klinik dan Analisis Faktor Risiko yang Berperan pada Derajat Keparahan Invasi Plasenta Abnormal di RSUP Persahabatan pada Tahun 2015-2018

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Abstrak

Latar belakang: *invasi plasenta abnormal adalah kondisi dimana plasenta memiliki implantasi yang mendalam di miometrium, dan pada beberapa kasus, hingga lapisan serosa uterus, hingga mengakibatkan perdarahan pascapersalinan dan meningkatkan kejadian kematian ibu.*

Tujuan: *untuk mengidentifikasi prevalensi, karakteristik klinis dan rasio odds-nya terhadap peningkatan derajat keparahan dari invasi plasenta abnormal di RSUP Persahabatan dari tahun 2015 hingga 2018.*

Metode: *kohort retrospektif*

Hasil: *dari tahun 2015 hingga 2018, prevalensi invasi plasenta abnormal adalah sebesar 0.8%. Faktor risiko yang meningkatkan derajat keparahan invasi plasenta abnormal adalah: usia di-atas 35 tahun (OR 1.6, 95% CI 0.41-6.24) dan riwayat seksio sesarea lebih dari 2 kali (OR 1.63, 95% CI 0.41-6.46). Makin parahnya invasi plasenta abnormal meningkatkan risiko ter-jadinya kehilangan darah selama operasi lebih dari 1000 ml (OR 2.13, 95% CI 0.52-8.76).*

Kesimpulan: *prevalensi invasi plasenta abnormal di RSUP Persahabatan dari tahun 2015 hingga 2018 adalah sebesar 0.8%. Secara statistik, usia, riwayat seksio sesarea lebih dari 2 kali, volume kehilangan darah, dan durasi operasi ditemukan berhubungan dengan kasus invasi plasenta abnormal.*

Kata-kunci: *invasi plasenta abnormal, akreta, inkreta, perkreta*

Introduction

Placenta accreta contributes to a significantly high morbidity up to 60% and mortality up to 7%.[1,2] The incidence of placenta accreta was 81,6%, increta 11,8 %, and percreta 6,6%.[3] Common risk factors of placenta accreta are previous cesarean section, placenta previa, mul-tiparity, maternal age more than 35 years and elevated alpha-fetoprotein in maternal serum.[4,5] The risk of placenta accreta increases up to 39% in patients with two or more previous cesare-an delivery and had an anterior or central placenta previa.[6]

RSUP Persahabatan, a type-A hospital and considered as a one of top referral hospital in East Jakarta and are associated with Academic Health System of University of Indonesia, gets many referral cases of morbidly adherent placenta every year. Based on that situation, we would like to identify the clinical characteristics and risk factors analysis for severity of mor-bidly adherent placenta in our hospital.

Method

This was a cohort retrospective study which included all patients who underwent cesarean section with suspected of morbidly adherent placenta in General Persahabatan Hospital from January 1, 2015 to June 30, 2018. Medical records, ultrasonography pictures and histo-patho-logical result of uterus and placenta, were reviewed and added to the research subject.

Several characteristics were measured to describe the proportion and to find odds ratio which relate to the increasing severity of morbidly adherent placenta. The classification of morbidly adherent placenta was divided into 2 groups, the accreta group and the increta-percreta group. The Chi-Square test was used to do bivariate analysis. The Fisher test was used if the prerequisite for Chi-Square test was not

fulfilled. Statistical significance was de-termined by p value below 0,05. SPSS v.24 was used to do the statistical calculation.

Result

From January 2015 to June 2018, there were 4.195 deliveries, and 34 (0,8%) cases were mor-bidly adherent placenta cases. Most of them were above 35 years (52,9%), and had a history of more than 2 cesarean deliveries (58,8%). There were 17 cases with placenta accreta (50%), 11 cases with placenta increta (32,4%), and 6 cases with placenta percreta (17,6%). There were 29 patients who had to underwent hysterectomy (85,3%) and 5 patients had conservative management (14,7%). Most cases had volume of blood loss more than 1000 ml (70,6%) and underwent more than 2 hours of surgery (82,4%). The difference between clinical parameters and increasing severity of adherent placenta with odds ratio and its con-fidence interval can be seen on tables.

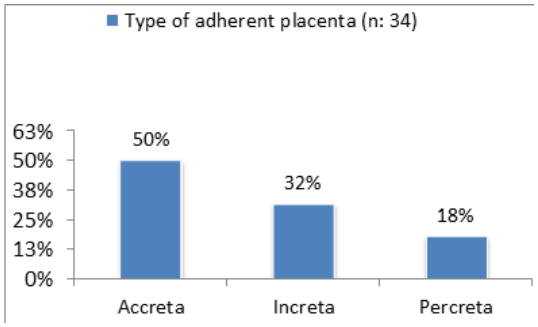

Figure 1. The Proportion of The Type of Adherent Placenta

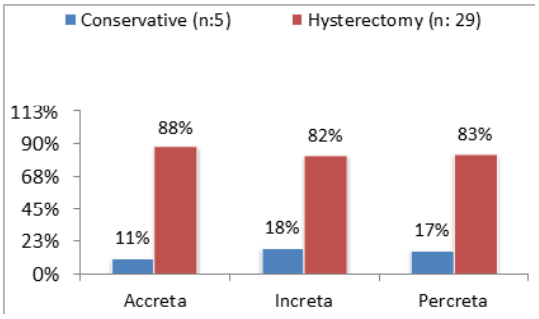

Figure 2. The Proportion of Surgical Technique in The Management of Adherent Placenta

Table 1. Clinical Characteristics and Management Related to Each Type of Adherent Placenta

Characteristics	Type of adherent placenta						Total		OR	P	95% CI
	Accreta		Increta		Percreta						
	N	%	N	%	N	%	N	%			
Age											
= 35 years	8	44,4	6	33,3	4	22,2	18	100	1,6	0,492	0,41-6,24
< 35 years	9	56,3	5	31,3	2	12,5	16	100			
Number of previous CS											
= 2	9	45	6	30	5	25	20	100	1,63	0,486	0,41-6,46
1	8	57,1	5	35,7	1	7,1	14	100			
Inter-delivery interval from last pregnancy											
< 18 month	2	66,7	0	0	1	33,3	3	100	0,47	1.000	0,04-5,72
= 18 month	15	48,4	11	35,5	5	16,1	31	100			

Table 2. Increasing Severity of Morbidly Adherent Placenta Related to Blood Loss Volume

Type of adherent placenta	Volume of blood loss		OR	95% CI
	> 1000 ml	≤ 1000 ml		
Percreta - Increta	12 (70,6)	5 (29,4)	2,13	0,52-8,76
Accreta	9 (52,9)	8 (47,1)		
Total	21	13		

Table 3. Increasing Severity of Morbidly Adherent Placenta Related to Duration of Surgery

Type of adherent placenta	Duration of surgery		OR	95% CI
	> 120 minutes	≤ 120 minutes		
Percreta - Increta	12 (70,6)	5 (29,4)	0,73	0,16-3,41
Accreta	13 (76,5)	4 (23,5)		
Total	25	9		

Discussion

Our study showed that most cases of morbidly adherent placenta in Persahabatan General Hospital was placenta accreta (50%). A study by Sofiah et al in Malaysia also found a similar result, which was around 58% of morbidly adherent placenta case was placenta accreta.7 Our study also showed that 52,9% cases were above 35 years old. This finding was similar with a study by Fitzpatrick et al which showed that advanced maternal age (= 35 years) was consid-ered as a significant risk factor for placenta accreta.[8] Another study by Usta et al in Lebanon, reported a different result that showed advanced maternal age was not associated with placenta accreta.[9] In our study, the increasing age of the subjects, although not statistically significant, had an OR of 1.61 (95%CI, 0.41-6.24).

The American College of Obstetrics and Gynecologic (ACOG) reported the incidence

of placenta accreta increases in patient with more than 2 cesarean deliveries and anterior or central placenta previa.[10] This is consistent with our study, although not statistically signifi-cant, history of more than 2 cesarean sections showed an OR of 1.63 (95%CI 0.41-4.46) for increasing severity of morbidly adherent placenta.

The mean of inter-delivery interval in this study was 60.88 ± 35.73 months. Shipp et al study demonstrated that inter-pregnancy interval was associated with the incidence of uterine rupture in women who had vaginal birth after Caesarean section. It was caused by non-optimal healing of uterine scars.[11,12] The placenta is created by interaction of maternal cells and fetal trophoblast cells. Trophoblast cells invades the vein and stroma in early pregnancy, thus the placenta grows in uterine cavity.[13] Uterine damage or poor healing due to previous hysterotomy allows the placenta to grow through an absent or damaged Nitabuch layer in the myometrium, thus increase the chance for having morbidly adherent placenta.[2] In our study, inter-delivery interval less than 18 months was not associated with increasing severity of morbidly adherent placenta. Surprisingly, 91.2% cases of morbidly adherent placenta had an inter-delivery interval more than 18 months.

There was no difference in the surgical technique for the management of morbidly ad-herent placenta. The presence of placenta increta-percreta was not associated with the choice of hysterectomy, many cases of placenta accreta were also performed hysterectomy (83.3% vs 88.9%).

Higher blood loss was observed in the increta-percreta case. Total blood loss more than 1000 ml was observed on increta-percreta case and had an OR to 2.13 (95%CI 0.52-8.76), although it was not statistically significant compared to accreta case. Our study was consistent with Mehrabadi, et al. which showed that 50% patient with placenta accreta had postpartum hemorrhage and up to 22,6% patient had severe postpartum hemorrhage that needed intensive management.[14]

Our study showed that mean operative time for adhesive placenta was 165,35 ± 52,981 minutes and there was no significant difference on operative time between increta-percreta and accreta. Takahashi et al held similiar study in Japan found that the average time required for the surgery of placenta accreta was 205 ± 78.3 minutes.[15]

Conclusion

The prevalence of morbidly adherent placenta at Persahabatan General Hospital in 2015-2018 was 0.8%. Age, history of Caesarean section more than 2 times, volume of blood loss, and duration of surgery were not statistically associated with adherent placenta case.

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