Research Report

Subchorionic Hematoma on Threatened Abortion as Risk Factors Occurrence of Spontaneous Abortion

Perdarahan Subkorionik pada Abortus Iminens sebagai Faktor Risiko Terjadinya Abortus Spontan

Ketut R.D. Wijayanti, Anak Agung N.J. Kusuma

Department of Obstetrics and Gynecology
Faculty of Medicine University of Udayana/
Sanglah General Hospital
Denpasar

Abstract

Objective: To determine whether sub chorionic hematoma increases the risks of spontaneous abortion.

Method: Study using prospective cohort design, in which case group was 30 patients with threatened abortion having subchorionic hematoma during 7-20 weeks gestational age (GA), and control group was 30 patients with threatened abortion not having subchorionic hematoma. Diagnosis was confirmed using the aid of ultrasound (USG) (Medison Sondace Live Prime 8000®). The sampling method was consecutive sampling of 7-20 weeks GA pregnancy, with minimum CRL measurements 10 mm, who came to obstetrics emergency room or outpatient clinic at Sanglah General Hospital. Patients were followed until 20 weeks GA by physical and USG examination. If the evaluation results were normal, patients were managed as a normal pregnancy. But if it had the same condition as diagnosis for threatened abortion, patients were re-managed as threatened abortion or according to current diagnosis.

Result: The average age of patient, gestational age upon examination at first visit and parity of case and control group were not statistically different (p>0.05). Percentage of spontaneous abortion within the case and control group was 40% and 13.33% respectively. The relative risks of spontaneous abortion were three times higher in the threatened group with subchorionic hematoma (RR=3; IK 95% = 1.09-8.25; p=0.02). Median time span of the occurence of spontaneous abortion in the case and control group was 12 and 16 weeks respectively.

Conclusion: The risk of spontaneous abortion in threatened abortion with subchorionic hematoma was 3 times higher than those without subchorionic hematoma.

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Key words: threatened abortion, subchorionic hematoma.

Abstrak

***Tujuan**: Untuk mengetahui apakah perdarahan subkorionik meningkatkan risiko terjadinya abortus spontan.*

***Metode**: Penelitian dengan desain kohort prospektif, di mana kelompok kasus adalah 30 kasus pasien abortus iminens dengan perdarahan subkorionik usia kehamilan 7 sampai dengan 20 minggu dan kontrol adalah 30 pasien abortus iminens tanpa perdarahan subkorionik. Diagnosis dipastikan dengan Ultrasonography (USG) (Medison Sondace Live Prime 8000®). Pemilihan kelompok kasus dan kontrol ditentukan dengan cara konsekutif sampling dari ibu hamil dengan abortus iminens pada usia kehamilan 7-20 minggu dengan ukuran CRL minimal 10 mm yang datang ke Instalasi Rawat Darurat (IRD) dan Poliklinik Obstetri dan Ginekologi Rumah Sakit Umum Pusat Sanglah. Evaluasi pasien dilakukan hingga usia kehamilan 20 minggu meliputi pemeriksaan fisik dan USG. Bila dalam pemeriksaan didapatkan kehamilan menjadi normal, pasien dikelola sebagai kehamilan normal, tetapi bila didapatkan kondisi yang sama saat diagnosis abortus iminens ditegakkan, pasien dikelola ulang sebagai abortus iminens atau sesuai dengan diagnosis pada saat itu.*

***Hasil**: Rerata usia, usia kehamilan saat pertama kali datang memeriksakan diri dan paritas antara kelompok kasus dan kontrol tidak berbeda secara statistik (p>0,05). Persentase kejadian abortus spontan pada kelompok kasus sebesar 40%, sementara pada kelompok kontrol 13,33%. Risiko relatif terjadinya abortus spontan meningkat pada abortus iminens dengan perdarahan subkorionik sebesar 3 kali (RR = 3; IK 95% = 1,09-8,25; p=0,02) dengan median rentang waktu terjadinya abortus spontan pada kelompok kasus adalah 12 minggu dan kelompok kontrol 16 minggu.*

***Kesimpulan**: Risiko terjadinya abortus spontan pada abortus iminens dengan perdarahan subkorionik sebesar 3 kali dibandingkan dengan abortus iminens tanpa perdarahan subkorionik.*

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***Kata kunci**: abortus iminens, perdarahan subkhorionik*

Correspondence: Ketut R.D. Wijayanti, Department of Obstetrics and Gynecology Sanglah General Hospital Denpasar
Jln. Pulau Bali no.1 Sanglah, Denpasar. Telephone: 0361-227911 (ex:223) Email: dewi_wijayanti75@yahoo.com

INTRODUCTION

Spontaneous abortion is abortion that occurs without medical or mechanical means to empty the uterus prior to 20 weeks gestation or less than 500-g birthweight.[1] Spotting in first trimester pregnancy is clinically defined as a threatened abortion in which 20-25% of all pregnant women was found with spotting or threatened abortion in the first trimester, and 50% of them would end in spontaneous abortion. More than 80% spontaneous abortion occurred at the gestational age less than 12 weeks.[2]

There are three classic causes of maternal mortality: hemorrhage, poisoning, and infections. According to the World Health Organization (WHO), abortion is the fourth cause of maternal mortality.[3] Research suggests that hormonal abnormalities are the cause of 35%-50% abortion.[4]

Maternal immune system is considered as a major role in a successful pregnancy, although the mechanism of how the body can accept conception until full term is still unknown. Subchorionic hematoma was defined as a specific pathology caused by the release

of part of the chorion plate from decidua in normal ovum and related with accumulation of abnormal blood in subchorial level. Ultrasound imaging shows the characteristic of half moon shape or a rocket that occupied part of the gestational sac circle.[5] Studies show an association between subchorionic hematoma and spontaneous abortion, although the exact data is still not clear yet. It has been suspected that the prognosis of subchorionic hematoma with clinical symptoms is worse than asymptomatic cases. This was an interesting case practically and academically according to researchers to predict whether a pregnancy could be succeeded through the first trimester.

BENEFITS

The subchorionic hematoma can be used as a predictor of spontaneous abortion in threatened abortion or normal pregnancy.

METHOD

The research was conducted in the delivery room in emergency room and outpatient clinic of obstetrics and gynecology Sanglah Hospital, Denpasar from November 2009 – December 2010. The study population was all pregnant women who came to the obstetrics emergency room and outpatient clinic Sanglah Hospital Denpasar with diagnosis of threatened abortion at 7-20 weeks of gestational age and size at least 10 mm CRL. Inclusion criteria were as follows: pregnant women with gestational age 7 - 20 weeks with a minimum size of 10 mm CRL, experienced threatened abortion who came to the emergency room and outpatient clinic of obstetrics and gynecology Sanglah Hospital Denpasar, and willing to join the study. Exclusion criteria were molla hidatidosa, fetuses with congenital abnormalities, pregnant women with uterine abnormalities, pregnant women with uterine myoma, and the patient resigned as research subjects.

Patients were divided into two groups, case group and control group. Case group consisted of pregnant women who experienced vaginal hematoma from the uterus at 7-20 weeks of gestation with a minimum size of 10 mm CRL, with abdominal pain or none at all, the uterus enlarged with age pregnancy, without the opening of the cervix, pregnancy test still positive, the products of conception were still in the uterus and heart activity was observed, and subchorionic hematoma as evidenced by ultrasound. Control group consisted of pregnant women with vaginal hematoma from the uterus at the age of 7-20 weeks gestation with a size minimum of 10 mm CRL, with abdominal pain or none at all, the uterus enlarged with age pregnancy, without any opening of the cervix, a pregnancy test still positive, which the products of conception still in the uterus, with cardiac activity, without subchorionic hematoma which was proved by ultrasound.

RESULT

Cohort study on 60 patients consisted of 30 cases and 30 controls.

The table below shows the variable of mother's age, gestational age on first presentation, parity, gestational age when at delivery in both groups, were not clinically different (p>0.05). With these data it can be concluded that there is an influence from the disturbing variable which can be lowered in both groups.

Table 1. Age, gestational age, parity, and gestational age at delivery

Variable	Mean ± SB		p
	Case (n = 30)	Control (n = 30)	
Maternal Age (years)	28.03±6.85	28.53±6.39	0.771
Gestational Age (week)	10.20±2.68	9.97±2.59	0.733
Parity (person)	2.00±1.05	2.20±1.10	0.473
Gestational age at parturition	38.28±0.75	38.50±0.86	0.381

Table 2. Subchorionic hematoma in spontaneous abortion incidence

Incidence	Group				Total
	Case (n=30)		Control (n=30)		
	n	%	n	%	
Threatened abortion	12	40%	4	13.33%	16
Not aborted	18	60%	26	86.67%	44

Table 2 shows that 40% of cases and 13.33% of control had spontaneous abortion.

Table 3. The association between subchorionic hematoma and incident of spontaneous abortion

	Abortion		Relative risk (RR)	IK 95%	p
	Yes	No			
Case	12	18			
			3.00	1.09-8.25	0.02
Control	4	26			

Table 3 shows that subchorionic hematoma increased the relative risk of abortion up to 3 times (RR=3; IK 95%=1.09-8.25; p=0.02)

Table 4. Median survival of each group

Variable	Group		p
	Case (n=30)	Control (n=30)	
Abortion Survival time	12	16	0,019

Table 4 shows that median time span of abortion in the case group with subchorionic hematoma was 12 weeks, and the median time span of abortion in the control group was 16 weeks. Obtained p-value = 0.019 (<0.05), which means that there is difference

of the median time span in the two groups of abortion. This study conducted survival analysis as a follow-up sample with the observations non uniform observation. Kaplan-Meier survival analysis (product limit method) indicated that the period of occurrence of threatened abortion are at gestational age 8, 10, 11, 12, and 14 weeks for the case group and 11, 12, 14, and 16 weeks for the control group. Patients who did not experience abortion were followed until parturition occured.

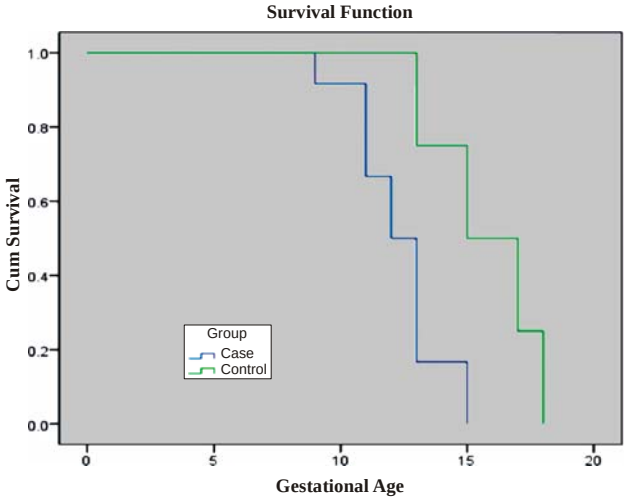

Figure 1. Kaplan-Meier Survival analysis (product limit method) indicated that the period of occurrence of threatened abortion are at gestational age 8, 10, 11, 12, and 14 weeks for the case group and 11, 12, 14, and 16 weeks for the control group.

DISCUSSION

The pathophysiology of subchorionic hematoma was still a debate. Subchorionic hematoma occurs between the uterine wall and the chorionic membrane, then through the cervical canal. At the end of the first trimester and early second trimester, hematoma can disturb and distance the subchorionic placental growth from attached place, so that the prognosis is worse than the hematoma that occurs early in the first trimester. In this study, mean age of mothers in case group was 28.03 ± 6.85 and in control group 28.53 ± 6.89. Some studies found that the incidence of threatened abortion increased with increasing age of the mother, and 35% abortion was found at the age 38 years old.[6,7] Mean gestational age in the case group was 10.20 ± 2.68 and in control group was 9.97 ± 2.59, means that there is no difference between cases and controls when complaints arised and patient presentation because most patients with mild subchorionic hematoma in the first trimester were asymptomatic.[8] The mean parity in the case group of this study was 2.00 ± 1.05 and in the control group 2.20 ± 0.86. In this study we found that 40% of the cases of 30 patients eventually experienced a spontaneous abortion while only 13.33% in control group. This finding means that spontaneous abortion in cases group was three-fold higher than spontaneous abortion that occurred in the control group. This finding was confirmed by Chi-Square test which determined the association between the incidence of subchorionic hematoma and threatened abortion. Chi-Square test indicated that the subchorionic hematoma increased relative risk of abortion by 3 times (RR=3; 95% CI=1.09 to 8.25; p=0.02).

Subchorionic hematoma in patient with clinical symptoms has a worse prognosis than in asymptomatic patient, as indicated by the span of the occurrence of threatened abortion in the case group that was at 12 weeks of gestation, much faster than control groups that was at 16 weeks of gestation (p=0.019: <0.05).[9]

CONCLUSION

This study concluded that the risk of spontaneous abortion in threatened abortion with subchorionic hematoma was 3 times higher than threatened abortion without subchorionic hematoma.

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