Research Article

Effect of Rectal Misoprostol to Blood Loss at High Risk Pregnancy

Efek Pemberian Misoprostol Per-rektal terhadap Jumlah Perdarahan pada Kehamilan Risiko Tinggi

Daniel Liando, IMS Murah Manoe, Eddy R Moeljono

Department of Obstetrics and Gynecology
Faculty of Medicine Universitas Hasanuddin/
Makassar

Abstract

Objective: To compare the effectiveness of rectal misoprostol administration to the amount of blood loss in 4th stage of labor at high risk pregnancy.

Method: We recruited all pregnant women with high risk criteria including anemia, age ≥ 35 years old, or the number of pregnancies ≥ 4. Women would deliver appropriate to standard procedure of normal delivery. After that, we gave 400-mcg tablet of misoprostol rectally in treatment group. To count the amount of blood loss during 4th stage of labor, we put the underpad.

Result: The amount of blood loss in 4th stage of labor in the treatment group was 201.1 (SD 80.3) ml less than the control group (285.9 (SD 93.2) ml). The result showed that the administration of 400-mcg misoprostol tablet rectally immediately after the birth of the placenta at high risk pregnancy impacted significantly to reduce the amount of blood loss in 4th stage of labor (p<0.001). The incidence of post-partum haemorrhage in the treatment group was 3.3% and 10% in control group. The drug side effects complained were nausea (6.7%) and shivering (3.3%).

Conclusion: Administration of 400 mcg rectal misoprostol after delivering the placenta in high risk pregnancy has significant influence to reduse the amount of blood less in fourth stage of labor.

[Indones J Obstet Gynecol 2016; 4-4: 187-189]

Keywords: 4th stage of labor, misoprostol, rectal, the amount of blood loss

Abstrak

***Tujuan**: Untuk membandingkan jumlah perdarahan kala IV persalinan yang diberikan misoprostol per rektal segera setelah lahirnya plasenta pada kehamilan risiko tinggi.*

***Metode**: Seluruh ibu hamil dengan salah satu kriteria risiko tinggi yang ditetapkan yaitu anemia, usia ≥ 35 tahun, atau kehamilan ≥ 4. Ibu yang akan bersalin tersebut dilahirkan sesuai prosedur Asuhan Persalinan Normal. Pada kelompok perlakuan, setelah lahirnya plasenta, pasien segera diberikan tablet misoprostol 400 mcg per rektal. Tetapi pada kelompok kontrol, tidak diberikan tablet misoprostol. Kemudian diletakkan alas bokong untuk menampung darah yang keluar selama kala IV persalinan.*

***Hasil**: Jumlah perdarahan pada kala IV persalinan kelompok perlakuan yaitu sebanyak 201,1 (SD 80,3) ml, lebih sedikit dibanding dengan kelompok kontrol yaitu sebanyak 285,9 (93,2) ml. Dari hasil uji analisis didapatkan bahwa pemberian tablet misoprostol 400 mcg per rektal segera setelah lahirnya plasenta pada kehamilan risiko tinggi mempunyai pengaruh yang signifikan untuk menurunkan jumlah perdarahan kala IV persalinan (p<0,001). Jumlah perdarahan kala IV ≥500 ml pada kelompok perlakuan yaitu sebanyak 3,3% lebih sedikit dibandingkan dengan kelompok kontrol yaitu sebanyak 10%. Ditemukan efek samping obat pada sebagian kecil sampel berupa mual (6,7%) dan menggigil (3,3%).*

***Kesimpulan**: Pemberian 400 mcg misoprostol per rektal setelah pengeluaran plasenta pada kehamilan risiko tinggi dapat menurunkan jumlah perdarahan pada kala IV persalinan.*

[Maj Obstet Ginekol Indones 2016; 4-4: 187-189]

***Kata kunci**: jumlah perdarahan, kala IV, misoprostol, rektal*

Correspondence: Daniel Liando; danlie_med@yahoo.com

INTRODUCTION

Postpartum haemorrhage (PPH) is a bleeding occured more than or equal with 500 cc after third stage of labor.[1] Postpartum haemorrhage is one of major pregnancy complication which is happened around 4-6% of vaginal delivery and it becomes the main cause of maternal mortality and morbidity. Each year, it causes 25-43% of maternal mortality during delivery and it is related to 515,000-600,000 cases of pregnancy death worldwide.[1] According to survey conducted by Survey Demografi Kesehatan Indonesia (SDKI) in 2012, the mortality rate in Indonesia was around 359 per 100,000 live births. This rate was increased from 228 per 100,000 live births in 2007.[2]

Uterine atony is the commonest cause of PPH contributing around 70% of PPH cases. It can be occurred right after delivery on both spontaneous or operative vaginal delivery and abdominal delivery.[3] Moreover, uterine atony often becomes the fastest killer for women in less than one hour due to PPH. More than 90% cases of uterine atony

usually happen during the first 24 hours of delivery. Therefore, supervision and prevention of PPH are the main concern.[4,5] In general, 88% of PPH takes place during four hours after delivery and anemia is the risk factor for massive PPH among pregnant women in developing countries.[6]

Clinicians often use some types of prostaglandin in fourth stage of labor to prevent PPH; however, active management of third stage had been properly done. The most often prostaglandin agent used to prevent PPH is misoprostol.[7]

Misoprostol as E1 prostaglandin is stable in high temperature and it can be used orally, sublingually, or even rectally. Misoprostol has been massively used in obstetrics and gynecology cases to induce the labor, management of abortion and PPH.[8] Bamigboye, et al. reported that 400-mcg misoprostol given rectally is effective to prevent the PPH.[9]

This study aims to determine the effect of 400-mcg rectal misoprostol given after delivering the placental to the amount of bleeding in fourth stage of labor for high risk pregnancy.

METHODS

This study was a randomized controlled trial held in delivery room of Dr. Wahidin Sudirohusodo Hospital, Fatimah Mother and Child Hospital, Pertiwi Mother and Child Hospital, Labuang Baji Hospital in Makassar from November 2014 to February 2015. The sample were taken through consecutive random sampling. The number of samples of each group were 30 subject. We recruited the high risk pregnant women and showed anemia through laboratory test (hemoglobin level ≤ 9 g/dl), age ≥ 35 years old, or grandemultipara (≥ 4 pregnancies).

Subjects in study group would immediately be given the 400-mcg rectal misoprostol right after delivering the placenta. Meanwhile, the control group did not get anything. After that, we put the underpad on the subjects' bottom to measure the amount of blood loss during fourth stage of labor. Data taken from this study were written down and further analyzed using SPSS.

RESULTS

There were 60 subjects taken consisted of 30 subjects in each group of control and study.

Table 1 showed that blood loss volume in fourth stage of labor fulfilling the high risk criteria. In study group, the mean of blood loss was around 201.1 (SD 80.3) ml and 285.9 (SD 93.2) ml in control group. Statistical analysis through independent t test showed that there was a significant difference in blood loss volume during fourth stage of labor in high risk pregnancy women (p<0.001).

Table 1. The Effectivity of Rectal Misoprostol in High Risk Pregnant Women Group

Group	Blood Loss (ml)		Discrepancy in Mean	p*
	Mean	SD		
Study group	201.1	80.3	84.8	<0.001
Control group	285.9	93.2		

* *Independent T-Test*

Table 2. The Incidence of Postpartum Haemorrhage

The Amount of Blood Loss in Stage 4 Labor	Study Group N (%)	Control Group N (%)
≥ 500 ml	1 (3.3%)	3 (10%)
< 500 ml	29 (96.7%)	27 (90%)

Table 2 showed that there was only 3 of 30 subjects in control group and 1 of 30 subjects in study group experiencing more than 500 ml blood loss in fourth stage of labor. Table 3 depicted the several side effects from rectal misoprostol including nausea (6.7%) and shivering (3.3%).

Table 3. Side Effects from the Study

Side Effect	Study Group N (%)	Control Group N (%)
None	27 (90%)	30 (100%)
Nausea	2 (6.7%)	0 (0%)
Shivering	1 (3.3%)	0 (0%)

DISCUSSION

This study showed that the amount of blood loss in fourth stage of labor for the whole subjects was 285.9 (SD 93.2) ml in control group and 201.1 (SD 80.3) ml in study group. The difference was occurred due to the rectal misoprostol mechanism of action in study group to reduce the amount of blood loss. The statistical analysis through in-

dependent t test showed there was significantly different between study and control group of blood loss ($p<0.001$). A study by Laili Chilmawati in Yogyakarta described that the amount of blood loss in fourth stage of labor among women who delivered vaginally was 102.13 (SD 67.34) ml in control group. This distinction was happened due to the sample criteria of high risk pregnant women. It made higher incidence of blood loss compared with the study done in Yogyakarta.[10]

The result of this study showed the significant correlation between parity and the amount of blood loss in fourth stage of labor among both study ($p=0.041$) and control group ($p=0.002$). This result revealed that blood loss in fourth stage of labor was mostly influenced by parity as one of risk factors instead of other risk factors. The result of this study was in accordance with the other study; whereas, the parity is claimed as the highest risk of PPH among all others.[11]

The number of subjects with blood loss volume more than 500 ml in fourth stage of labor were 3 (10%) and 1 (3.3%) in control and study group; respectively. This result showed that 400-mcg rectal misoprostol after delivering placenta could reduce the incidence of PPH in high risk pregnancy. Misoprostol is the recommendation agent to prevent PPH which has officially been published by International Confederation of Midwives (ICM) and the International Federation of Gynecology and Obstetrics (FIGO).[8] On the other hand, this study also found several side effects of rectal misoprostol including nausea (6.7%) and shivering (3.3%). In conclusion, the use of 400-mcg rectal misoprostol is safe for the patients.

CONCLUSION

The use of 400-mcg rectal misoprostol right after delivering the placenta in high risk pregnancy has significant influence to reduce the amount of blood loss in fourth stage of labor. Parity as a risk factor is considered the strongest factors contributing the amount of blood loss. The management of PPH with rectal misoprostol after delivering placenta as a prophylactic is recommended for high risk pregnancy. In future, other studies should be conducted to assess the impact of other high risk factors toward blood loss volume in fourth stage of labor.

REFFERENCES

1. Cunningham F, Gart FN, Leveno J. The McGraw-Hill Companies: Williams Obstetrics, 2001: 685-735.
2. BPS. Survei Demografi dan Kesehatan Indonesia. 2012: 1-29.
3. Cameron M and Robson S. Vital Statistic: An Overview. A Textbook of Postpartum Haemorrhage. 2006: 17-31.
4. JNPK-KR. Asuhan Persalinan Normal. Asuhan Esensial Persalinan. 2008: 123-44.
5. Humera A. One Year Prospective Randomised Comparative Study Oral Misoprostol with Intravenous Methylergometrine in Prevention of Postpartum Haemorrhage in Cases High Risk for Postpartum Haemorrhage. Department of Obstetrics and Gynecology. 2001: 31-7.
6. Versaevel N, Darling L. Prevention and Management of Postpartum Hemorrhage. AOM Board of Directors. 2006: 1-12.
7. WHO. WHO Recommendations for The Prevention of Post Partum Haemorrhage. 2007: 4-21.
8. Depkes-RI. Penggunaan Misoprostol di bidang Obstetri dan Ginekologi. 2008: 1-75.
9. Carpenter JP. Misoprostol for Prevention of Postpartum Hemorrhage: An Evidence-based Review by The United States Pharmacopeia. 2001: 1-6.
10. Chilmawati L, Pradjatmo H, Siswosudarmo HR. Pengaruh Pemberian Asam Traneksamat Terhadap Jumlah Perdarahan Pascasalin Pada Kelahiran Vaginal. J Kes Reprod. 2014: 15-32.
11. Willacy H. Postpartum Haemorrhage. Egton Medical Information System. 2015: 1-6.