

# EFFECT OF INDUCTION WITH OXYTOCIN DRIP ON INCIDENCE OF POSTPARTUM HEMORRHAGE IN BUNDA ASY SYIFA MOTHER AND CHILD HOSPITAL BANDAR LAMPUNG

Bella Cintania<sup>1</sup>, Aditiawarman<sup>2</sup>, Ratna Dwi Jayanti<sup>3</sup>

<sup>1</sup>Department of Midwifery Education, Faculty of Medicine University Airlangga 60132, Surabaya, East Java, Indonesia

<sup>2</sup>Department of Public Health Sciences-Preventive Medicine, Faculty of Medicine University Airlangga 60132, Surabaya, East Java, Indonesia

Corresponding Author: [bella.cintania-2020@fk.unair.ac.id](mailto:bella.cintania-2020@fk.unair.ac.id)

## Abstract

**Background:** Postpartum hemorrhage is an important problem because it is related to maternal health and can cause death. The definition of postpartum hemorrhage is bleeding of 500 ml or more that occurs after the baby is born. In 2013, the highest maternal mortality rate in Indonesia was caused by postpartum hemorrhage, which was 30.3%. The most common etiology of postpartum hemorrhage was uterine atony (60%) and placental complications (36%), the largest factor (4%) was a history of previous postpartum hemorrhage, anticoagulant drugs, anemia, severe preeclampsia or HELLP syndrome, uterine fibroma, multiple pregnancies. The most common side effects of oxytocin are nausea, vomiting, and the worst side effects are allergic reactions, blood clotting problems, heart arrhythmias, heavy or continued bleeding after delivery, increased blood loss, and blood clots in the pelvis. **Objective:** The purpose of this study was to analyze the effect of oxytocin drip induction on the incidence of postpartum hemorrhage at RSIA Bunda Asy Syifa Bandar Lampung in 2020. **Methods:** This study used an analytic observational method through approach case control with a sample size of 254 samples. Sampling used a total random sampling method using secondary data taken in 2021. Bivariate analysis was carried out with Chi-Square. **Results:** The results showed that postpartum hemorrhage was more common in mothers who were given oxytocin drip induction as much as 57%, and 43% were not given oxytocin drip induction. In mothers who did not experience postpartum hemorrhage, it was more common in mothers who were not given oxytocin drip induction as much as 86%, and those who were given oxytocin drip induction were 14%. **Conclusion:** Mothers who were given oxytocin drip induction were 8.4 times more likely to experience postpartum hemorrhage. Health workers carry out regular monitoring and recording of the progress of labor on the partograph as a preventive measure against risk factors for postpartum hemorrhage.

Keywords: Maternity, Postpartum Bleeding, Oxytocin Drip Induction

## 1. Introduction

Postpartum hemorrhage is an important problem because it is related to maternal health which can cause death. Although the maternal mortality rate has decreased from year to year with the existence of antenatal care and treatment, hospital deliveries and the availability of blood transfusion facilities, bleeding is still a major factor in maternal mortality. Postpartum hemorrhage can cause maternal death, 45% occurs in the first 24 hours after the baby is born, 68-73% within one week after the baby is born and 82-88% in the two weeks after the baby is born. Factors that influence the incidence of postpartum hemorrhage are prolonged labor, parity, excessive uterine stretching, oxytocin drip, anemia, and surgical delivery. The most common etiology of postpartum hemorrhage was uterine atony (60%) and placental complications (36%), the greatest

risk (4%) was a history of previous postpartum hemorrhage, anticoagulant drugs, anemia, severe preeclampsia or HELLP syndrome, uterine fibroma, multiple pregnancies. (Ministry of Health, 2015).

Maternal mortality rate (MMR) is one of the important indicators of public health status. In 2013, the highest maternal mortality rate in Indonesia was caused by postpartum hemorrhage as much as 0.3%. In addition to bleeding, the other highest causes of maternal death are hypertension in pregnancy, infection, prolonged labor and abortion. Based on the WHO analysis, 27.1% of the causes of maternal death were mainly due to bleeding, more than 2/3 of which were deaths due to postpartum hemorrhage. Labor that is problematic with his or her power if it continues can cause postpartum hemorrhage. Power is the strength of his or the mother's contractions in pushing. Power can be a problem in labor, complications in his are hypotonic uterine activity, uterine inertia hypertonic contractions, uterine tetania, uncoordinated his, maternal fatigue, straining, and misguided stage II. If labor does not progress, augmentation can be done by giving oxytocin to continue labor. The action taken to deal with problem power this is to provide uterotonic. The commonly used uterotonic is oxytocin by dripping to increase uterine contractions.

Oxytocin or uterotonic are drugs that stimulate uterine contractions. There are 3 types of uterotonic, namely: oxytocin, misoprostol, and ergometrine. One of the most commonly used uterotonic drugs is oxytocin. This hormone was given the name oxytocin based on its physiological effect, namely accelerating the labor process by stimulating uterine smooth muscle contractions. The most common side effects of oxytocin are nausea, vomiting, and the worst side effects are allergic reactions, blood clotting problems, heart arrhythmias, heavy or continued bleeding after delivery, increased blood loss, and blood clots in the pelvis. Data from the Health Profile of Lampung Province in 2019 showed that the maternal mortality rate increased in 2018 by 102 cases to 110 cases with the main cause of bleeding (Lampung Health Office, 2019). Based on these data the authors are interested in researching "The Effect of Induction with Oxytocin Drip on the Incidence of Postpartum Bleeding at RSIA Bunda Asy Syifa in 2020".

## 2. Method

This research uses an analytic observational research with approach case control. The population in this study were all mothers who gave birth at RSIA Bunda Asy Syifa from January 1, 2020 – December 31, 2020. The data were taken by means of total sampling that met the requirements to be the research sample. The sample in this study was divided into two, namely the case group and the control group. The independent variable in this study was oxytocin drip. The dependent variable in this study was postpartum hemorrhage. In this study, all variables are nominal scale. Research time in April-August 2021. Data collection in this study used secondary data. Researchers collect data on dependent variables and independent variables that are needed by using the Register Book and Patient Medical Records sources. Data processing is used by editing, coding, scoring, data entry, and tabulating. The data collected was processed using the test Chi Square using Software.

### 3. Result

#### 1) Relations Induction Drip Oxytocin Against Genesis Bleeding Postpartum

Table 1. Cross tabulation of the relationship induction drip of oxytocin on the incidence of postpartum hemorrhage in RSIA Lady Ash Shifa Bandar Lampung

Induction Drip of Oxytocin	Postpartum Hemorrhage				Result	
	Yes	%	No	%	F	%
Induced with oxytocin drip	50	57	23	14	73	29
Not induced with oxytocin drip	37	43	144	86	181	71
Total	87	100	167	100	254	100

**p=<0,001** OR=8.461 [CI 95% 4,589-15,600]

Coefficient contingency 0.417 (**p=0,000**)

Based on Table 1. shows that the distribution of the frequency of occurrence of postpartum hemorrhage occurs more frequently in women given induction drip of oxytocin as many as 50 people (57%). In the control sample, the frequency distribution of the incidence of mothers who did not experience postpartum hemorrhage was more common in mothers who were not given oxytocin drip induction as many as 144 people (86%). Based on statistical tests using the chi-square value,  $p < \alpha = 0.05$ , which means that there is a relationship between induction and oxytocin drip on the incidence of postpartum hemorrhage at RSIA Bunda Asy Syifa Bandar Lampung. The strength of the relationship between the two variables is seen based on the contingency coefficient, which is 0.417 which means the strength of the relationship is moderate. Then the results of the Odds Ratio (OR) obtained OR = 8,461 [95% CI 4,589-15,600] which means that the range of 4,589-15,600 does not exceed the value 1, then the birth mother who is given induction with oxytocin drip has an 8.4 times greater chance of experiencing postpartum hemorrhage than mothers who were not induced with oxytocin drip.

### 3 Discussion

The results showed that women who experienced postpartum hemorrhage were given oxytocin drip induction during labor (57%). The majority of mothers who did not experience postpartum hemorrhage were given oxytocin drip induction during their delivery (86%). Based on statistical tests using chi-square,  $p$  value = 0.000 ( $p < \alpha = 0.05$ ), which means that there is a relationship between induction and oxytocin drip on the incidence of postpartum hemorrhage at RSIA Bunda Asy Syifa Bandar Lampung. The results of the Odds Ratio (OR) obtained OR = 8,461 [95% CI 4,589-15,600] which means that the range of 4,589-15,600 does not exceed the value 1, then mothers who are given induction with oxytocin drip have an 8.4 times greater chance of experiencing postpartum hemorrhage than maternity mothers who were not induced with oxytocin drip.

These results are in line with research conducted by Yekti (2017) at Panembahan Senopati Hospital Bantul that of 19 mothers who gave birth with oxytocin drip, most of them experienced postpartum hemorrhage, namely 16 respondents (84.2%). And it is also in line with the research conducted by Sri (2017) that there is a significant relationship between getting oxytocin drips with the incidence of uterine atony which causes postpartum hemorrhage and it means that pregnant women who receive oxytocin drips are 7,500 times more

likely to experience uterine atony, compared to mothers who give birth who do not. get an oxytocin drip. Postpartum hemorrhage is vaginal bleeding of 500 cc or more after the third stage is complete after the placenta is born. Postpartum hemorrhage can cause maternal mortality, 45% occurs in the first 24 hours after the baby is born, 68-73% within one week after the baby is born, and 82-88% in the two weeks after the baby is born.

Based on the function of giving oxytocin drip, it is divided into labor induction and labor acceleration or augmentation (Saifuddin, 2014). Induction of labor is an attempt to stimulate the uterus to initiate labor. Induction is intended to stimulate contractions before spontaneous labor begins, with or without rupture of the membranes. Acceleration of labor or augmentation is to increase the frequency, duration, and strength of uterine contractions in labor. Augmentation refers to stimulation of spontaneous contractions that are considered inadequate due to failure of cervical dilatation and fetal descent (Saifuddin, 2014). Stimulation with oxytocin drip can stimulate uterine contractions that have not contracted and increase the strength and frequency of contractions in the contracted uterus (Varney, 2014). Oxytocin drip stimulation with the aim of accelerating at low doses can increase the strength and frequency of contractions, but at high doses it can cause uterine tetania to cause extensive maternal birth canal trauma and cause bleeding and uterine inversion. Meanwhile, oxytocin drip stimulation with the purpose of induction causes excessive stimulation of the uterus so that it experiences overdistension (excessive stretching of the uterus) and causes hypotonia after delivery.

#### 4 Conclusion

Based on the research that has been carried out, the researchers draw the following conclusions; Maternal mothers who were given induction with oxytocin drip had an 8.4 times greater chance of experiencing postpartum haemorrhage, and there is a significant relationship between induction and oxytocin drip on the incidence of postpartum hemorrhage.

#### Acknowledgements

Thank you to the head of the hospital, coordinating midwife, and other health workers at the Bunda Asy Syifa Mother and Child Hospital Bandar Lampung who have given permission and assistance during the research.

#### References

- Cunningham, Gary, et al. 2013. Williams Obstetrics, 23rd Ed. United State of America: MC Graw Hill Companies Inc.
- Ediyanti, DB dan Rachmah I. 2014. "Faktor Pada Ibu yang Berhubungan dengan Kejadian Komplikasi Kebidanan". Jurnal Biometrika dan Kependudukan. Vol. 3, No. 1 Juli 2014: 1-7. Surabaya.
- Erina, dan Musdalifa. 2020. "Hubungan Karakteristik Ibu Inpartu Terhadap Kejadian Perdarahan Postpartum Di RSUD Budi Kemuliaan Periode Tahun 2019". Medikes (Media Informasi Kesehatan), Volume 7, Nomor 2, November 2020.
- Kemenkes RI. 2015. Profil Kesehatan Indonesia Tahun 2014. Jakarta: Kemenkes RI.
- Kemenkes RI. 2019. Profil Kesehatan Indonesia Tahun 2019. Jakarta: Kemenkes RI.

Manuaba IAC, Manuaba IBG, Manuaba IBGF, Manuaba IBG. 2014. Ilmu Kebidanan, Penyakit Kandungan, dan KB Untuk Pendidikan Bidan. Jakarta: EGC.

Prawirohardjo S. 2014. Ilmu Kebidanan. Jakarta: PT Bina Pustaka Sarwono Prawirohardjo.

Saifuddin, Bari. 2014. Buku Panduan Praktis Pelayanan Kesehatan Maternal dan Neonatal ed.1 cet.13. Jakarta: PT Bina Pustaka Sarwono Prawirohardjo.

Satriyandari, Y., & Hariyati, N. R. (2017). Faktor-Faktor Yang Mempengaruhi Kejadian Perdarahan Postpartum. *Journal of Health Studies*, 1(2), 49–64.

Sri Dinengsih, A. I. S. P. (2017). Analisis Faktor Yang Berhubungan Dengan Kejadian Atonia Uteri Pada Ibu Bersalin Di Rumah Sakit Kencana Kota Serang. *Midwifery Journal Of Stikes Insan Cendekia Medika Jombang*, 13(1), 8–12.

Varney, Hellen, et al. 2014. Buku Ajar Asuhan Kebidanan Edisi IV. Jakarta: EGC.

Wiknjosastro, H. 2014. Ilmu Kebidanan. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo.