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**RESEARCH**

## Effectiveness of Oral Misoprostol as Cervical Ripening at Premature Rupture Of Term Pregnancies With Bishop Score $\leq 4$ In Padang

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**Abstract**

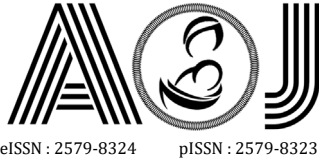
Premature rupture of membranes (PROM) is defined as rupture of membranes before contraction (his). PROM is the case of 5-10% of all deliveries. 70% of cases of PROM occur in term pregnancies. So that PROM in aterm pregnancies is suggested to induce labor to reduce the incidence risk of mother and fetus complications. This study aimed to compare the effectiveness of cervical ripening by using Misoprostol 25  $\mu\text{g}$  peroral and without using Misoprostol 25  $\mu\text{g}$  at term premature rupture of the membrane with Bishop Score  $\leq 4$ . This study was conducted at the Departement of Obstetrics and Gynecology, Dr. M. Djamil Central General Hospital, and Reksodiwiry Hospital Padang from November 2013 – August 2014 Simple Random Sampling design. The subject selected based on inclusion criteria, then assess the state of the cervix and laboratory examination and nonstress test, then recapitulated and processed data is computerized using the computer software and statistical test. Significant differences increase bishop scores on 25 mcg misoprostol orally with those not given to premature rupture of membranes at term with less than bishop scores or equal to ( $\leq$ ) 4. The p-value evidence this was  $0.000 < 0.05$ . And there is no side effects in this study.

**Keywords:** misoprostol effectivity, premature rupture of membrane

**INTRODUCTION**

Premature rupture of membranes (PROM) is defined as the amniotic fluid's rupture before the contractions (his). This PROM occurs 5-10% of all deliveries. 70% of cases of PROM occur in term delivery. The 2007 American College of Obstetricians and Gynecologists (ACOG) recommends PROM that occurs at term pregnancy to induce labor to reduce the incidence of risk of maternal and fetal complications. However, this decision still takes into account several things, including fetal presentation, cervical maturity, and possible infection.<sup>1</sup>

Dr.M. Djamil Padang, respectively from 2007, 2008, and the first six months of 2009, found drip failure in cases of premature rupture of membranes as much as 35.85%, 42.42%, 54.84%. It can be seen from year to year that the rate of drip failure increases so that the number of cesarean sections also increases. The cause of drip failure is due to an immature cervix.<sup>2</sup>



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Cervical assessment is the most influential thing in the success of labor induction. Before the start of labor induction, there is a standard procedure that must be performed to assess the cervix, namely, deep examination. After we do a deep check, the cervix will be classified into two groups: ripe and immature (ripe and unripe). About half of all women who undergo labor induction have an immature cervix, so cervical ripening is required. Cervical ripening techniques can be in the form of pharmacological or non-pharmacological methods.<sup>1</sup>

The success of labor induction depends on cervical conditions such as cervical consistency and configuration. An immature cervix will make it difficult to induce labor. A simple and efficient method of cervical ripening before labor induction is desirable. There are various cervical ripening methods with advantages and disadvantages, including the administration of oxytocin, prostaglandin, prostaglandin analogs, the use of herbs and castor oil, or mechanical methods such as the use of foley catheters and other methods. Oxytocin and prostaglandin are some of the most frequently used agents in cervical ripening and labor induction.<sup>3</sup> From various studies that have been carried out using prostaglandins showed better results on cervical ripening than the use of oxytocin.<sup>4</sup>

The first study of the use of misoprostol in cervical ripening was in a South African country. Subsequent studies reported that intravaginal misoprostol was more beneficial than other drugs frequently used in cervical ripening, including oxytocin and prostaglandins.<sup>5</sup>

Ekele et al. (2007), in their study of 151 patients at Usmanu Danfodiyo University Teaching Hospital Nigeria, found that misoprostol was safe and effective for use in cervical ripening and labor induction with a 96% rate of normal delivery.<sup>6</sup>

If PROM occurs at a term of gestation, termination of the pregnancy should be done. The choice of the vaginal or cesarean section depends on the mother, fetus, and pregnancy condition. Cervical ripening (Level of evidence Ia, Recommendation A) with misoprostol 25 µg vaginally every 6 hours for two administrations if bishop score  $\leq$  five or misoprostol 20-25 µg orally every 2 hours for two administrations. Do not give oxytocin before 6 hours of misoprostol.<sup>7-9</sup>

Dr. M. Djamil Padang has a protocol for managing PROM cases in pregnancy by waiting up to 6 hours. It is expected that after 6 hours of PROM, the patient will enter labor (inpartu). If not in labor, induction of labor with oxytocin is performed. However, this causes a high rate of induction drip failure so that the cesarean section rate also increases due to induction performed on an immature cervix.

## METHOD

This research is a randomized controlled clinical trial without any blindness, conducted in the Obstetrics and Gynecology department of Dr. M. Djamil Padang and S Reksodiwiryono Padang from November 2013 August 2014. The samples were divided into two groups; Group A,



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PROM patients who were given oral 25 ug of misoprostol, group B, were PROM patients who were not given oral 25 ug of misoprostol.

The selection of subjects was carried out randomly in this study using simple random sampling. This aimed to make each group have an equal number of subjects at one time. Data analysis and statistical tests were performed on a computer using the Statistical Program for Social Science (SPSS) software for Windows version 15.0 using the t-test.

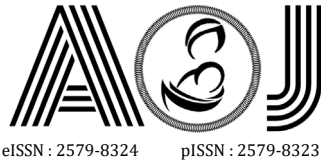
**RESULTS**

During the study period from November 2013 to August 2014, it was found that the number of pregnant patients with premature rupture of membranes who met the inclusion criteria and did not meet the exclusion criteria came to the delivery room at Dr. M. Djamil Padang and Reksodiwiryono Padang Hospital, namely 14 patients (3 patients at Dr. M. Djamil Hospital and 11 patients at Reksodiwiryono Hospital). The number of pregnancies not given misoprostol was 7 people and 7 people were given misoprostol. The characteristics of research subjects, data and analysis are presented in the following table (table 1).

**Table 1.** Sample Characteristic

No	Variable	Group				p	Sig.
		Did not take misopropol		Take misopropol			
		Mean	SD	Mean	SD		
1	Mother's age	26,86	5,52	30,43	6,95	0,308	NS
2	Gravida	1,57	0,79	2,57	1,40	0,125	NS
3	Preganancy age	38,86	1,464	39,00	1,291	0,850	NS
4	PROM Duration	1,43	0,535	1,43	0,732	1,000	NS
5	Bishop Score	3,14	0,38	3,29	0,49	0,552	NS

The mother's mean age was  $26.86 \pm 5.52$  in the group not given misoprostol and  $30.43 \pm 6.95$  in the misoprostol group, the age of the mother did not have a statistically significant difference ( $0.308 > 0.05$ ). Gravid a mean of  $1.57 \pm 0.79$  in the group not given misoprostol and  $2.57 \pm 1.40$  in the misoprostol group, Gravid did not have a statistically significant difference ( $0.125 > 0.05$ ). Maternal gestational age averaged  $38.86 \pm 1.464$  in the group not given misoprostol, and  $39.00 \pm 1.291$  in the misoprostol group, the maternal age of pregnancy was not statistically significant ( $0.850 > 0.05$ ). The mean PROM duration of PROM was  $1.43 \pm 0.535$  in the group not given misoprostol, and  $1.43 \pm 0.732$  in the misoprostol group, the duration of PROM did not have a statistically significant difference ( $1,000 > 0.05$ ). The initial bishop score was  $3.14 \pm 0.38$  in the group not given the misoprostol and  $3.29 \pm 0.49$  in the misoprostol group, the initial bishop score did not have a statistically significant difference ( $0.552 > 0.05$ ).



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**Table 2.** Comparison of Cervical Maturation Effectiveness

No	Variable	Group				p	Sig.
		Did not take misopropol		take misopropol			
		Mean	SD	Mean	SD		
1	Bishop Score increase	0,00	0,00	2,14	0,90	0,000	S

The average bishop score increase was  $0.00 \pm 0.00$  in the group not given misoprostol and  $2.14 \pm 0.90$  in the misoprostol group, the p value was  $0.000 < 0.05$ , meaning that there was a significant difference in the increase in the bishop score in the misoprostol 25 ug orally not given for premature rupture of membranes at term with a bishop score of or equal to ( $\leq$ ) 4.

**Table 3.** Side effect

Side effect	Did not take misopropol	take misopropol
None	7 (100 %)	7 (100 %)
Nauseous/ vomit	0	0
Diarrhea	0	0
Tachysystole	0	0
Hypertonus	0	0
Hyperstimulation	0	0

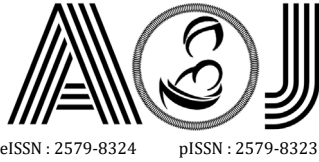
Side effects such as nausea, vomiting, diarrhea, tachysystolic, hypertonus and hyperstimulation syndrome were not found in these two study groups (Table 3).

**CONCLUSION**

There is a significant difference in the increase in bishop score in administering 25 ug of misoprostol orally with those not given to premature rupture of membranes at term with a bishop score of or equal to ( $\leq$ ) 4. This is evidenced by the p-value obtained at  $0.000 < 0.05$ . There were no side effects in this study.

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