

THE EFFECT OF CASTOR OIL (*RICINUS COMMUNIS*) ON THE DURATION OF THE FIRST STAGE OF LABOR : SYSTEMATIC REVIEW

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Abstract

Labor is the process by which the baby, placenta, and membranes are expelled from the mother's uterus. It is considered normal if the process occurs at term (after 37 weeks) without any complications. Labor begins when the uterus contracts and causes changes in the cervix (opening and thinning) and ends with the delivery of the complete placenta. Weakening of contractions or inadequate contractions is the most common cause of non-smooth labor or often referred to as the absence of progress in labor in the first stage. One of the non-pharmacological alternative ways to help progress in the first stage of labor is the consumption of castor oil (*Ricinus communis*) which contains ricinoleic acid, oleic acid, linoleic acid and palmitic acid through the blood circulation will release the hormones estrogen and progesterone to stimulate smooth muscle to increase the hormone prostaglandin EP3 Receptor which causes the uterus to contract so that it will affect the duration of the first stage of labor and the progress of the labor. To determine the effect of giving castor oil on the duration of the first stage of labor. This study uses a systematic review, which is one method that uses a review, analysis, structured evaluation, classification, and categorization of the evidence based that has been produced previously. The data used three international journals obtained from the screening of a number of journals of the portal international journals, PubMed, SciePub, Elsevier was identified through a system approach Population, Intervention, Comparison, Outcomes and Study Design (Picos). From 3 journals, it was found that the administration of Castor Oil (*Ricinus communis*) can shorten the duration of labor with the content of Castor Oil such as ricinoleic acid, palmitic acid, oleic acid and linoleic acid. Based on the study that has been carried out by the author, it is concluded that based on 3 journals, it is found that giving 60 ml of castor oil (*Ricinus communis*) has an effect on cervical dilatation and effacement so that it affects the duration of labor.

Keywords: Oil, *Ricinus communis*, Labor, Duration, Labor

Introduction

Labor is the process by which the baby, placenta and membranes are expelled from the mother's uterus. Labor is considered normal if the process occurs at term (after 37 weeks) without any complications. Labor begins when the uterus contracts and causes changes in the cervix (opening and thinning) and ends with the delivery of the complete placenta (Sondakh, 2015). There are 5 essential factors that affect the process of labor and delivery. These factors are referred to as the 5 Ps, namely power (strength), passanger (fetus and placenta), passage (birth canal), psychologic (psychological response) and helper. The labor process to the acceleration of the duration of the first stage is influenced by the work of these five factors, namely the first force to push the fetus out of power which includes his (uterine strength), ligament action, abdominal wall muscle contraction and diaphragm contraction (Sari and Wagiyo, 2017).

Weakening of contractions or inadequate contractions is the most common cause of non-smooth labor or often referred to as the absence of progress in labor in the first stage (Macones R 2012).

The World Health Organization (WHO) reports that every day in 2017, around 810 women died from preventable problems or complications of pregnancy and childbirth. One of the complications in childbirth is prolonged labor, analysis of World Health Organization data shows that in 2017 prolonged labor was the direct cause of childbirth complications with an incidence of 69,000 or 2.8% of deaths from all maternal deaths worldwide (Annisya W, 2020).

Efforts to prevent these obstacles or problems can use alternative methods, both pharmacological and non-pharmacological. Pharmacological methods include labor induction, besides that it can also use comprehensive care in labor, especially in the first stage, namely by using alternative non-pharmacological methods that have no harmful, effective and simple effects. One of the non-pharmacological alternative ways to help the progress of the first stage of labor is by consuming castor oil which contains palmitic, oleic, linoleic and ricinoleic acids through blood circulation, which will release the hormones estrogen and progesterone to stimulate smooth muscles, increase the hormone prostaglandin EP3 Receptor which causes the uterus contract so that it will affect the duration of the first stage of labor and the progress of labor. (Retno Asih, 2019).

Castor oil is produced from the seeds of the jatropha plant (*Ricinus communis*) which contains as much as 87% of the phytochemical ricinoleic acid which is able to increase uterine smooth muscle work thereby increasing uterine contractions, this is in line with research by Okoro, et al, Castor Oil (*Ricinus communis*) can speed up the labor process.

Based on the background, the authors are interested in identifying the results of previous studies and want to obtain comprehensive knowledge from the latest literature related to the Effect of Giving Castor Oil (*Ricinus communis*) on the Duration of the First Stage of Labor by using a Systematic Review.

Material and Methods

This study uses a Systematic Review using the Preferred Reporting Items for Systematic Review method, this method is carried out systematically by following the correct stages or research protocols. The Systematic review is one method that uses reviews, studies, structured evaluations, classification and categorization of evidence based that has been produced previously (Nursalam, 2020).

The steps in implementing a systematic review are very well planned and structured so that this method is very different from the method which is just to convey a literature study. The use of keywords in the search is oil, *Ricinus communis*, labor, contraction, and duration. Search journals and sources online with accessible databases, namely PubMed, Elsevier and Sciepub.

Result and Discussion

From 3 journals it was found that the administration of Castor Oil (*Ricinus communis*) can shorten the duration of labor with the content of Castor Oil such as ricinoleic acid, oleic acid, linoleic acid and palmitic acid.

Tabel 1.1 Comparison between castor oil group and control group in relation to labour duration

<i>Items</i>	Castor oil group (N = 50)		Control group (N =50)		t.	P. value
	X	±S.D	X	±S.D		
• First stage (hrs)	5.16	3.77	6.84	3.21	-2.39	*.01
• Second stage (min)	49.28	33,40	60	9,69	.59	.55
• Third stage (min)	24.78	6.97	30	3.77	2.87	*.005
• Total duration of labor (hrs)	5.88	3.82	12.5	3.29	2.93	*.004

Based on the results of systematic reviews that have been carried out, there is an effect of giving castor oil (*Ricinus communis*) on the duration of the first stage of labor. *Ricinus communis* is an herbal plant containing ricinoleic acid, oleic acid, linoleic acid, and palmitic acid which stimulate a smooth muscle to increase the activity of the hormone prostaglandin EP3 Receptor so that it triggers uterine contractions (Sunaru et al, 2012).

Based on research conducted by (Okoro OS et al, 2019) it was found that there was an effect on the contractions of pregnant women who consumed castor oil. Maternal contractions increased in the first 24 hours after consuming castor oil. Similar research was also conducted by (Gilat Ronit et al., 2017). The Research was conducted on 81 women and Bishop Score, respondents were given 60 ml of castor oil and 60 ml of sunflower oil. The results obtained were that respondents entered the second stage of labor after 24, 36, and 48 hours after consuming castor oil.

This is in line with research (Abed Hoda et al., 2014) From the results of the study, it was found that maternal contractions increased in the first 24 hours after consuming castor oil.

However (Leino, L 2009) reported that drinking castor oil which is supposed to induce labor can cause strong diarrhea and vomiting in the mother. These results are consistent with the results of this study which showed that one-fifth of the women from the castor oil group complained of nausea and vomiting while 10% of them experienced severe diarrhea.

Research (Kelly at al 2010) concluded that all women who consumed castor oil felt nauseous. In addition (Ravani M, 2006) conducted a study that the expected maternal side effects of castor oil, including watery stools and nausea, occurred in almost all patients.

Based on a literature study conducted by researchers, it was found that giving castor oil (*Ricinus communis*) is effective in increasing uterine contractions because it contains ricinoleic acid, oleic acid, linoleic acid, and palmitic acid which can increase the prostaglandin EP3 receptor hormone that can trigger contractions. Giving 60 ml of castor oil (*Ricinus communis*) to pregnant women can be used as a complementary therapy. Complementary midwifery services are part of the application of complementary and alternative medicine in the midwifery service arrangement to improve the health status of the community through promotive, preventive, curative, and

rehabilitative efforts by providing quality, safe, and highly effective health services to reduce medical interventions both during pregnancy and childbirth. pregnancy or childbirth.

Conclusion

Based on the study that has been carried out by the author, it is concluded that based on 3 journals, castor oil has an effect on cervical dilatation and thinning so that it affects the duration of labor.

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Declaration of Interest Statement

The author declares no conflict of interest in preparing this article

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