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Castor oil as a natural alternative to labor induction: A retrospective descriptive study

Andrea L. DeMaria^{a,*}, Beth Sundstrom^b, Grace E. Moxley^c, Kendall Banks^f,
Ashlan Bishop^c, Lesley Rathbun^d

^a College of Health and Human Sciences, Purdue University, West Lafayette, IN, USA

^b Department of Communication, College of Charleston, Charleston, SC, USA

^c Honors College, College of Charleston, Charleston, SC, USA

^d Charleston Birth Place, North Charleston, SC, USA

^e Emory University School of Medicine, Emory University, Atlanta, GA, USA

^f Belk College of Business, University of North Carolina at Charlotte, Charlotte, NC, USA

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ABSTRACT

Aim: To describe birthing outcomes among women who consumed castor oil cocktail as part of a freestanding birth center labor induction protocol.

Methods: De-identified data from birth logs and electronic medical records were entered into SPSS Statistics 22.0 for analysis for all women who received the castor oil cocktail ($n = 323$) to induce labor between January 2008 and May 2015 at a birth center in the United States. Descriptive statistics were analyzed for trends in safety and birthing outcomes.

Results: Of the women who utilized the castor oil cocktail to stimulate labor, 293 (90.7%) birthed vaginally at the birth center or hospital. The incidence of maternal adverse effects (e.g., nausea, vomiting, extreme diarrhea) was less than 7%, and adverse effects of any kind were reported in less than 15% of births. An independent sample t-test revealed that parous women were more likely to birth vaginally at the birth center after using the castor oil cocktail than their nulliparous counterparts ($p < .010$), while gestational age ($p = .26$), woman's age ($p = .23$), and body mass index ($p = .28$) were not significantly associated.

Conclusions: Nearly 91% of women in the study who consumed the castor oil cocktail to induce labor were able to give birth vaginally with little to no maternal or fetal complications. Findings indicate further research is needed to compare the safety and effectiveness of natural labor induction methodologies, including castor oil, to commonly used labor induction techniques in a prospective study or clinical trial.

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Statement of significance

Problem or issue

Few studies have examined castor oil as a natural alternative to labor induction, despite anecdotal evidence of its efficacy.

What is already known

Midwives have used castor oil as a natural way to induce labor, which could allow women to have a desired birthing process without medical intervention.

What this paper adds

Our results show women who consumed a castor oil cocktail to induce labor experienced adverse fetal and maternal outcomes at very low rates. Further research, including a clinical trial, should be conducted to test the safety and efficacy of castor oil as a natural alternative to labor induction.

1. Introduction

The World Health Organization called for the support of physiological childbirth, which includes the elimination of unnecessary interventions, twenty years ago.¹ This statement emerged to mitigate the risks associated with limited labor progression definitions, which often result in unnecessary preemptive medical

* Corresponding author at: College of Health and Human Sciences, 812 West State Street, West Lafayette, IN, 47907, USA. Fax: +1 765 494 0869.

E-mail address: ademaria@purdue.edu (A.L. DeMaria).

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interventions.² In 2013, the American College of Nurse-Midwives, the Midwives Alliance of North America, and the National Association of Certified Professional Midwives issued a consensus statement supporting healthy and normal physiologic childbirth.³ By allowing for the natural progression of physiologic labor and birth when safe and advisable, a caregiver may respect the power of the woman and fetus and facilitate a safer and healthier outcome as there is no unnecessary intervention to disrupt the normal process.⁴ Furthermore, the benefits of physiologic childbirth continue beyond labor and birth, as new mothers experience better physical and mental health, infant growth and development is improved, and risk of chronic disease is reduced.³

One intervention targeted by the World Health Organization's call for decreased unnecessary intervention is the use of synthetic oxytocin to induce or augment labor.⁴ This recommendation comes after substantial evidence-based research suggesting many possible adverse effects of synthetic medical induction, including increased risk of infection for the woman and fetus, abnormalities in uterine contractions, greater incidence of instrumental birthing, uterine hyperstimulation, and lower maternal satisfaction with the birth experience.^{5–7} Furthermore, these oftentimes unnecessary interventions during childbirth, including labor augmentation and induction, decrease maternal satisfaction.⁶ In a recent study, participants overwhelmingly preferred low intervention settings, such as alternative birth centers for prenatal care and childbirth.⁹ Additionally, major survey findings from the ongoing *Listening to Mothers Initiative*¹⁰ revealed the majority (58%) of respondents agreed, somewhat or strongly, that interference with the birth process should only happen if medically necessary. Castor oil, a natural alternative to oxytocin historically utilized by midwives for labor induction, may prevent the cascade of negative outcomes linked to oxytocin use. Stimulating the uterus to begin labor through the use of castor oil may offer a natural and safe alternative to medical induction. As a result, the use of castor oil to stimulate labor and avoid unnecessary medical intervention may offer access to improved health, decreased costs, and better care.

2. Literature review

A normal physiologic childbirth includes spontaneous onset and progression of labor, whereas medical induction or augmentation of labor disrupts normal childbirth.^{11,12} Routine technical and medical interventions may interfere with normal processes and cause adverse effects, including uncomfortably strong contractions and unnatural uterine muscle stress,^{19–21} which are often addressed by the use of synthetic oxytocin.² According to a national survey of women's childbearing experiences in the US, 50% of women received synthetic oxytocin to induce or augment labor.¹³ Oxytocin is one of the most commonly used pharmacological induction agents¹⁴ and presents an increased risk of harm.¹⁵ It requires close monitoring and advanced safeguards to maintain safety.³ Oxytocin use increases the potential for cesarean birth and decreases the probability of vaginal birth.^{5,16–18} Research presented at the annual clinical American College of Obstetricians and Gynecologists meeting by Tsimis²² describes associations between oxytocin and increased neonatal intensive care unit admissions, as well as lower Apgar scores. Furthermore, recent studies have shown possible associations between the use of oxytocin and subsequent psychological and developmental disorders.^{23–25}

Castor oil (*Ricinus communis*), a natural vegetable oil, is an alternative to pharmacological induction agents, such as synthetic oxytocin.²⁶ Labor augmentation with castor oil can be a successful way to begin labor among women who are pregnant and not yet presenting with uterine contractions. Motivations for labor stimulation include maternal and fetal health issues, such as preeclampsia, premature rupture of membranes, and, most

frequently, post-date pregnancies.^{7,27,28} Employed by midwifery practices to stimulate labor for centuries, castor oil continues to be utilized in many modern day practices.^{29,30} According to a national survey of members of the American College of Nurse-Midwives, 90 of the 172 respondent midwives utilized natural supplements for labor stimulation, and 93% of those who utilized natural supplements used castor oil.³¹

The US Food and Drug Administration classifies castor oil as a laxative, yet anecdotal evidence suggests its effectiveness at labor induction.^{32,33} Studies indicate that castor oil may increase cervical ripening and enhance uterine contractions³⁰ by the activating effect of metabolite ricinoleic acid on prostaglandin EP₃ receptors in the smooth muscles of the uterus and intestine.³⁴ Extant research shows that castor oil might lead to positive labor induction outcomes; however, results are mixed and inconclusive.^{12,26,33,35,36} Overwhelmingly, data indicate that labor stimulation techniques have not been rigorously scientifically studied.³¹ Further research is needed to provide formative data regarding castor oil's use in labor stimulation.

The purpose of this study was to describe the outcomes of women who consumed a castor oil cocktail to induce labor. This study adds to existing research regarding castor oil's role in labor induction via a retrospective descriptive clinical chart review of women who birthed at a certified nurse-midwife (CNM)-led freestanding birth center in the United States. A retrospective clinical chart review was conducted to obtain information about birth outcomes and adverse effects. This method of data collection provided a longitudinal sample of women who birthed at a birth center over an eight-year period.

3. Methods

A retrospective clinical chart review was conducted of all women who received prenatal care at a freestanding birth center located in an urban southeastern region of the United States, and consumed a castor oil cocktail to induce labor between January 2008 and May 2015. Castor oil is a favored provider intervention promoted, suggested, and used at the site for the induction of labor. At the birth center featured in the current study, castor oil is offered as part of a cocktail containing other common ingredients (see Section 3.1). Although the additional ingredients included in the cocktail are believed to be inert, they may have affected the efficacy of the castor oil in stimulating labor, suggesting the need for further research examining the administration of castor oil alone. Between these dates, there were a total of 1,606 documented births at the birth center. The birth center follows the philosophy and standards for the American Association of Birth Centers,³⁷ and is a licensed and accredited by the Commission for Accreditation of Birth Centers.³⁸ Care is provided by a team of Certified Nurse Midwives and on call midwives. This includes enhanced prenatal appointments, one-on-one labor support, intermittent fetal monitoring, encouraging upright positions for labor, non-pharmaceutical labor pain relief methods, delayed cord clamping, early skin to skin care, and no routine separation of mom and baby.

3.1. Sample

The majority of women who gave birth at this birth center self-identified as white (86.5%; n = 1389), utilized private insurance to cover the cost of their pregnancy (56.9%; n = 914), and had a mean age of 28.9 ± 4.7 years. Of those, 323 (20.1%) women used the castor oil cocktail for labor induction. For the purposes of this study, only those who consumed the castor oil cocktail were included within further analyses. The castor oil cocktail is blended smoothie containing the following ingredients: 2 ounces castor oil, 1 cup champagne, 1 cup apricot nectar, and 4 tablespoons of

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