

Analysis of the Clinical Effect of Traditional Chinese Medicine Stimulation Decoction on Promoting Cervical Maturation in the Third Trimester of Pregnancy

Xi Zhao*

Obstetrics Department, Changzhou Hospital of Traditional Chinese Medicine, Changzhou 213000, Jiangsu, China

**Author to whom correspondence should be addressed.*

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Abstract: *Objective:* To explore the clinical effect of traditional Chinese medicine stimulation decoction in promoting cervical maturation in the third trimester of pregnancy, in order to enhance the safety and success rate of delivery. *Methods:* A retrospective analysis was conducted on the clinical data of 500 pregnant women in the third trimester who received the intervention of traditional Chinese medicine stimulation decoction from June 2022 to June 2025. The cervical maturity score (Bishop score) and the mode of delivery were used as effect indicators and compared with the control group that did not receive the stimulation decoction. *Results:* The Bishop score of the intervention group significantly increased (7.8 ± 1.2 , 5.3 ± 1.1 in the control group, $P < 0.01$), the vaginal delivery rate was higher than that of the control group (78% vs. 65%, $P < 0.05$), and the average delivery time was shortened to 6.2 ± 1.4 hours (8.5 ± 1.6 hours in the control group, $P < 0.01$). *Conclusion:* The traditional Chinese medicine stimulation decoction has a good effect on promoting cervical maturation in the third trimester of pregnancy, which is helpful to reduce the rate of cesarean section and increase the rate of vaginal delivery.

Keywords: Traditional Chinese Medicine Promoting Decoction; Late pregnancy; Cervix maturity; Natural childbirth; Cesarean section rate

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1. Introduction

Reducing the proportion of cesarean sections and enhancing natural productivity are the key topics in obstetric research at present, involving the maturation management of the cervix in late pregnancy. Cervical maturity is a key factor affecting the smooth progress of delivery and the safety of both the mother and the baby. The role that traditional Chinese medicine plays in adjusting physical conditions and accelerating the process of childbirth is

receiving increasing attention from more people ^[1]. In the current academic research, most of the focus is on the use of Western medicine to influence the maturation of the cervix, while there are relatively few literatures that conduct in-depth discussions on the role of traditional Chinese medicine in this regard ^[2]. Promoting cervical maturation with traditional Chinese medicine decoction may offer a milder and more effective approach for parturients, thereby enhancing the safety of childbirth and the proportion of natural childbirth, and opening up new avenues for clinical childbirth management ^[3].

2. Materials and methods

2.1. Research object

In the obstetrics department of a certain hospital, from June 2022 to June 2025, 500 women in the third trimester of pregnancy were included in the analysis. The selected research subjects were all singleton pregnant women over 37 weeks of gestation, ensuring that there were no cases with clear contraindications for delivery such as placenta previa, abnormal fetal position, or severe pregnancy complications. The admitted patient has undergone a cervical maturity test, and no immediate delivery is required. The basic characteristics of pregnant women, such as age, gestational weeks, and previous obstetric history, all met the inclusion criteria of the study and ensured comparability at the baseline level ^[4].

2.2. Inclusion and exclusion criteria

The inclusion criteria include: (1) For the gestation of a single embryo, if the pregnancy has reached 37 weeks or more, it falls under this type of pregnancy situation; (2) A preliminary assessment of cervical maturity, if it is lower than the Bishop scoring standard by five points; (3) The vagina is the expected passage for delivery, and delivery is the expected vaginal process.

Exclusion criteria include: (1) contraindications for delivery such as placenta previa and abnormal fetal position; (2) Severe pregnancy complications such as gestational hypertension syndrome and gestational diabetes, etc.; (3) Has a history of cesarean section or other uterine surgeries in the past; (4) Pregnant women who are allergic to or have a history of adverse reactions to traditional Chinese medicine components. After strict screening, 500 pregnant women who met the research conditions were finally determined.

2.3. Research ethics and informed consent of patients

This research has been officially approved by the Medical Institution Ethics Review Committee and has strictly adhered to the relevant regulations of medical ethics throughout the entire process. Before the study was initiated, all participants had signed an informed consent document, which clearly defined the intention, procedures, potential risks and benefits of the study. Privacy protection and autonomous participation rights of all subjects were strictly safeguarded by the research collective.

2.4. Research design

This study was a retrospective comparative analysis. Through two group designs, namely the induction drink intervention group and the control group, it explored the effects of the traditional Chinese medicine induction drink on cervical maturity and delivery methods in the third trimester of pregnancy. All participating pregnant women were randomly divided into two groups according to the order of admission, with 250 cases in each group ^[5]. The stimulation drink intervention group received a standard dose of the traditional Chinese medicine stimulation

drink, while the control group was observed according to conventional prenatal management.

2.5. Grouping: The stimulation drink intervention group and the control group

In the comparative analysis, the basic prenatal data of the two groups of subjects, namely those who received the intervention and those who did not, showed similarities after the induction drinking ^[6]. The experimental group treated with the traditional Chinese medicine “induction drinking” was contrasted with the control group that only received standard prenatal care and monitoring. The two groups were analyzed and compared respectively on indicators such as Bishop score, mode of delivery and delivery time before and after treatment to evaluate the intervention effect of the traditional Chinese medicine inducing decoction ^[7].

2.6. Sample size determination

Based on the previous relevant research data and the standard deviation estimation of the Bishop score, to ensure sufficient statistical significance levels for comparisons between groups, a two-sided test was used, with the power set at 0.80 and the significance level $\alpha = 0.05$. Ultimately, it was determined that at least 250 subjects were needed in each group, totaling 500 cases ^[8].

2.7. Intervention methods

2.7.1. The ingredients, dosage, and administration method of the traditional Chinese medicine decoction for promoting growth

Components, Dosage and Administration Method of the Traditional Chinese Medicine “Fertilizing Drink” Granule Form. This study administered “Fertilizing Drink” in the form of granules (herb type: granule formula). The specific formula and dosage are as follows: Each dose contains 3 g of white peony (Tianjiang Granules - National Procurement), 5 g of roasted (Tianjiang Granules - National Procurement), 5 g of large belly bark (Tianjiang Granules - National Standard), 5 g of wine-processed Angelica sinensis (Tianjiang Granules - National Procurement), and 5 g of Chuanxiong (Tianjiang Granules - National Procurement). Administration method: Twice a day (bid, once in the morning and once in the evening), take with warm water half an hour after meals; Administration period: Continuously take 5 doses (a total of 5 days), during which the drug dosage remains fixed and no adjustments are made.

2.7.2. Monitoring and observation during the medication period

During the medication period, the medical team closely observed the physiological responses of the pregnant woman, including heart rate, blood pressure, body temperature, fetal heart rate monitoring, frequency and intensity of uterine contractions, and other indicators. The bishop score is conducted every two days to monitor the progress of cervical maturity. Pregnant women are closely observed to determine if adverse reactions such as nausea and abdominal pain occur. Once any abnormality is detected, corresponding measures must be taken promptly and drug treatment should be stopped if necessary. Under standardized prenatal tracking management, the control group did not receive any drug treatment.

2.8. Effect evaluation indicators

2.8.1. Cervical maturity (Bishop score)

The assessment of cervical maturity is conducted using the bishop scoring mechanism. This mechanism comprehensively evaluates five key parameters: the degree of cervical dilation, length, position of the protruding

part of the fetus, softening state and direction, and constructs a 13-point evaluation system. Before delivery, the state of the cervix of all patients is evaluated. The higher the cervical score, the higher the maturity. Thus, the possibility of natural childbirth is greater. Before and after the intervention, the effect of the examined beverage on the induction of labor was evaluated by comparing the changes in Bishop scores of the two groups^[9].

2.8.2. Mode of delivery (vaginal delivery, cesarean section)

This study analyzed the significant differences in the proportion of vaginal delivery and cesarean section between pregnant women who received the intervention of the induction drink and those who did not, to evaluate the effect of the induction drink in promoting delivery.

2.8.3. Time of delivery

The time from the active period to the birth of the newborn is defined as the delivery time. The delivery process of the two groups of parturients was recorded in time and compared with their average duration, aiming to evaluate whether a certain drug can effectively reduce the delivery time, increase the comfort of the parturient, and alleviate the stress response during delivery.

2.9. Statistical analysis

2.9.1. Data processing methods

All data were processed using SPSS statistical software. Measurement data were expressed as mean $\pm$ standard deviation (SD), and count data were expressed as rates or constituent ratios. The t-test was used to compare the differences between the two groups of measurement data, and the χ^2 test was used to compare the count data. The significance level was set at $P < 0.05$.

2.9.2. Statistical methods and test criteria

To ensure the reliability of the results, a two-sided test was used for statistical analysis. All results with a P value of less than 0.05 were considered statistically significant. A comparative analysis was conducted on the differences in Bishop score, mode of delivery and delivery time between the stimulation drink intervention group and the control group to confirm the effect of the traditional Chinese medicine stimulation drink in promoting cervical maturation in the late stage of pregnancy^[10].

3. Results

3.1. Demographic characteristics and baseline data

Among the 500 pregnant women in the third trimester of pregnancy in this study, there were 250 cases in the stimulation drink intervention group and 250 cases in the control group. There was no statistically significant difference between the two groups in terms of demographic characteristics such as age, gestational weeks, weight, and previous obstetric history ($P > 0.05$), ensuring the balance of the baseline level (**Table 1**).

3.2. Basic demographic data of the groups

Table 1. Basic demographic data of the groups

Indicator	Cuishengyin intervention group (n = 250)	Control group (n = 250)	P-value
Age (years)	30.2 ± 3.4	30.1 ± 3.5	> 0.05
Gestational age (weeks)	39.0 ± 1.1	39.2 ± 1.0	> 0.05
Weight (kg)	68.5 ± 5.3	68.3 ± 5.4	> 0.05
History of previous births	1.1 ± 0.7	1.0 ± 0.8	> 0.05

3.3. Analysis of cervical maturity score

The bishop scores of pregnant women in the intervention and control groups showed no significant difference before the intervention ($P > 0.05$). After intervention with Cuishengyin, the Bishop score in the intervention group significantly increased. The average score was 7.8 ± 1.2 , significantly higher than the control group's 5.3 ± 1.1 ($P < 0.01$) (Table 2).

Table 2. Analysis of Cervical Maturity (Bishop) Score

Score item	Before Cuishengyin	After Cuishengyin (Intervention Group)	Control group	P-value (Intergroup comparison after intervention)
Bishop score	4.2 ± 1.0	7.8 ± 1.2	5.3 ± 1.1	< 0.01

3.4. Comparison of delivery modes

Analysis of delivery modes showed that the vaginal delivery rate in the Cuishengyin intervention group was significantly higher than that in the control group (78% vs. 65%, $P < 0.05$), while the cesarean delivery rate was significantly lower than that in the control group (22% vs. 35%, $P < 0.05$). The delivery process was smoother in the intervention group, with the probability of spontaneous vaginal delivery significantly increased (Table 3).

Table 3. Comparison of delivery modes

Delivery mode	Cuishengyin intervention group (n = 250)	Control group (n = 250)	P-value
Vaginal delivery (%)	78	65	<0.05
Cesarean delivery (%)	22	35	<0.05

3.5. Comparison of delivery duration

Regarding delivery duration, the time from the active phase to the end of delivery was significantly shorter in the Cuishengyin intervention group. The average delivery time was 6.2 ± 1.4 hours, compared to 8.5 ± 1.6 hours in the control group ($P < 0.01$). This result indicates that Cuishengyin intervention helps shorten delivery time and improve the efficiency of labor progression (Table 4).

Table 4. Comparison of delivery duration

Indicator	Cuishengyin intervention group (n = 250)	Control group (n = 250)	P-value
Average delivery time (hours)	6.2 ± 1.4	8.5 ± 1.6	< 0.01

3.6. Adverse reactions and safety

Monitoring of adverse reactions during medication showed that pregnant women in the Cuishengyin intervention group experienced mild adverse reactions such as abdominal distension and nausea, with an incidence rate of 10%. No such adverse reactions were observed in the control group. All adverse reaction symptoms were mild, and no severe adverse events occurred (**Table 5**).

Table 5. Adverse reactions and safety

Adverse reaction type	Cuishengyin intervention group (<i>n</i> = 250)	Control group (<i>n</i> = 250)
Mild abdominal distension (%)	5	0
Nausea (%)	5	0
Severe adverse events (%)	0	0

The above results indicate that the traditional Chinese medicine Cuishengyin is effective and safe for application in late pregnancy. It helps improve cervical maturity, promote spontaneous vaginal delivery, and shorten delivery time.

4. Discussion

4.1. Analysis of the mechanism of action of Traditional Chinese Medicine Promoting Decoction

The main mechanism of action is to promote the maturation of the cervix by promoting blood circulation and removing blood stasis, unblocking meridians and enhancing uterine contractions of the traditional Chinese medicine decoction. For instance, herbal ingredients such as *Ligusticum chuanxiong* and *Angelica sinensis* have the effects of regulating qi and blood as well as promoting blood circulation. These medicinal materials help the softening and dilation process of the cervix by increasing the blood flow to the uterus. When *Ligusticum chuanxiong* is combined with safflower, it can significantly promote local blood circulation, optimize cervical blood flow, and thereby enhance the flexibility of cervical tissue. *Angelica sinensis* has the effect of promoting blood replenishment and blood circulation and has a positive impact on the maturation process of the uterus and cervix. Drugs may promote the production of cervical collagenase by adjusting the hormonal balance in the human body, causing the cervical tissue to become looser, thereby facilitating the preparation for childbirth.

4.2. Comparison of research results with existing literature

This experiment concluded that the use of traditional Chinese medicine stimulation decoction can significantly improve the bishop score, reduce the rate of cesarean section, increase the rate of vaginal delivery, and has no significant adverse reactions. The safety and efficacy of using traditional Chinese medicine for promoting pregnancy decoction in the late stage of pregnancy have been confirmed by domestic research. It can effectively promote the maturation of the cervix and shorten the duration of labor. In the international academic community, although research on the role of traditional Chinese medicine in promoting cervical maturation is still insufficient, existing studies have pointed out that several natural plant components may have potential effects on enhancing cervical maturation and promoting the process of childbirth ^[11]. The data from this study further verified the positive role of the traditional Chinese medicine decoction for promoting childbirth in improving the success rate

of delivery and supplemented the domestic literature support on the intervention of traditional Chinese medicine in cervical maturation.

4.3. Comparative analysis of relevant studies in China and other countries

Domestic scholars have gradually explored the application of traditional Chinese medicine decoction in the field of herbal medicine and observed its efficacy during the delivery process. They have found that this drink is expected to significantly reduce the number of cesarean section cases and accelerate the process of natural childbirth. In overseas regions, Western medicines such as oxytocin and prostaglandins are usually chosen for the treatment of cervical maturation, while the use of traditional Chinese medicine is relatively rare^[12]. The results of this study provide further data support for the clinical application of the traditional Chinese medicine decoction for promoting childbirth, which is conducive to promoting its wide application in childbirth management. It also reflects that the depth and breadth of domestic research on promoting cervical maturation with traditional Chinese medicine still need to be enhanced to gain more international recognition.

4.4. Limitations of the research

The limitations of this study include: 500 samples of women in the third trimester of pregnancy were collected in this study, which is insufficient in terms of sample size. This may impose certain constraints on the general adaptability of the experimental conclusions. The limitation of this study lies in that it briefly examined the immediate impact of the delivery process but did not track the long-term effects, such as postpartum health conditions^[13]. In the final assessment of delivery in this study, only the bishop score and the mode of delivery were used as key parameters, and other physiological and psychological variables that might affect the delivery process were not comprehensively considered. Future exploration is expected to incorporate larger-scale datasets, longer-term tracking, and introduce more evaluation criteria to comprehensively enhance the depth of research^[14].

4.5. Suggestions for clinical application

When applying the traditional Chinese medicine decoction for promoting growth in clinical practice, it is necessary to carefully select the appropriate patient group. For pregnant women, before undergoing traditional Chinese medicine treatment, it is necessary to verify that they have no history of contraindications for childbirth or allergies to traditional Chinese medicine^[15]. This can effectively reduce the possible risks during the treatment process. For pregnant women in the late stage of pregnancy whose cervix is not fully mature, if vaginal delivery is expected, it is recommended that they receive medical monitoring while using medication, to timely observe the uterine contractions of the pregnant woman and the fetal heart rate. For pregnant women who have undergone cesarean section or uterine surgery, extra caution should be exercised when using relevant medical measures^[16]. During the medication process, the physiological condition of pregnant women must be strictly monitored. If adverse reactions such as nausea and abdominal distension occur, corresponding measures must be taken promptly for intervention.

5. Conclusion

In conclusion, the study demonstrates that the traditional Chinese medicine stimulation decoction is an effective intervention for promoting cervical ripening in the third trimester. Its application holds significant clinical promise for reducing cesarean section rates and enhancing the likelihood of successful vaginal delivery.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Chen X, 2006, Analysis of the Effect of Traditional Chinese Medicine Shengli Decoction on Promoting Cervical Maturation in the Third Trimester of Pregnancy. *Sichuan Journal of Traditional Chinese Medicine*, 2006(11): 90–91.
- [2] Jia Y, Kang S, Yu J, et al., 2022, The Influence of Modified Chinese Herbal Decoction on the Success Rate of Vaginal Delivery Induction after Cesarean Section. *Family Planning and Obstetrics and Gynecology in China*, 14(1): 81–84.
- [3] Zhao X, 2008, Nursing Observation on Promoting Cervical Maturation with Traditional Chinese Medicine Shenggan Decoction in the Third Trimester of Pregnancy. *Chinese Community Physicians (Medical Professional Bimonthly)*, 2008(13): 164.
- [4] Chen S, Liang L, 2018, Study on the Effect of Traditional Chinese Medicine Zhuan Decoction on Promoting Cervical Maturation in the Third Trimester of Pregnancy. *Clinical Research of Traditional Chinese Medicine*, 10(21): 142–144.
- [5] Xu G, 2018, Clinical Application Research of Modified Traditional Chinese Medicine Inducing Decoction Combined with Oxytocin in Promoting Cervical Maturation. *Soochow University*, 2018(12): 12–13.
- [6] Jia Y, Kang S, Yu J, et al., 2022, The Influence of Modified Chinese Herbal Decoction on the Success Rate of Vaginal Delivery Induction after Cesarean Section. *Family Planning and Obstetrics and Gynecology in China*, 14(1): 81–84.
- [7] Xu G, 2018, Clinical Application Research of Modified Traditional Chinese Medicine Inducing Decoction Combined with Oxytocin in Promoting Cervical Maturation, thesis, *Soochow University*.
- [8] Li W, Liang M, Tan L, et al., 2017, Observation on the Effect of COOK Cervical Balloon Combined with Traditional Chinese Medicine Inducing Labor Decoction on Promoting Cervical Maturation and Inducing Labor. *Clinical Medical Engineering*, 24(6): 821–822.
- [9] Cai X, 2016, Clinical Observation on the Promotion of Cervical Maturation and Induction of Labor by COOK Cervical Balloon Combined with Traditional Chinese Medicine Stimulation Decoction. *Shenzhen Journal of Integrated Traditional Chinese and Western Medicine*, 26(2): 34–36.
- [10] Li Y, Fu S, Yang M, Ji Y, 2013, The Effect of Cervical Dilation Balloons on Promoting Cervical Maturation and Inducing Labor. *Guangdong Medicine*, 2013(15): 3.
- [11] Ye M, Meng D, 2020, Research on the Current Application Status and Medication Analysis of Chinese Patent Medicines in Obstetrics and Gynecology. *Journal of Traditional Chinese Medicine Management*, 2020(7): 6–13.
- [12] Wang J, Li H, 2019, The Effect of Modified Induction Drink Combined with Cervical Balloon Dilation on the Bishop Score of the Cervix, Vaginal Delivery Rate and Maternal and Infant Outcomes in Patients with Induced Labor in Late Pregnancy. *Evaluation and Analysis of Hospital Medication in China*, 2019(5): 15–18.
- [13] Chen S, Liang L, 2018, Study on the Effect of the Traditional Chinese Medicine Shengli Decoction on Promoting Cervical Maturation in the Third Trimester of Pregnancy. *Clinical Research on Traditional Chinese Medicine*, 2018(21): 2–3.
- [14] Chen Y, 2017, The Influence of Cervical Dilation Balloons on Promoting Cervical Maturity and Delivery Outcomes in Full-Term Pregnant Patients. *Chinese Journal of Maternal and Child Health*, 2017(7): 128–133.
- [15] Obstetrics Group, Obstetrics and Gynecology Branch, Chinese Medical Association, 2016, Expert Consensus on Vaginal Delivery Management for Subsequent Pregnancies after Cesarean Section (2016). *Chinese Journal of Obstetrics and Gynecology*, 2016(8): 12–13.

- [16] Obstetrics Group, Obstetrics and Gynecology Branch, Chinese Medical Association, 2014, Guidelines for Promoting Cervical Maturation and Inducing Labor in the Third Trimester of Pregnancy. Chinese Journal of Obstetrics and Gynecology, 2014(11): 66–77.

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