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Induction of Labour with *Apamarga Vasa Moola Yoni Lepa* - A Pilot Study

Author: Bharti Yadav¹

Co Authors: Gayathri Bhat N.V.² and Prasanna Narasimha Rao³

^{1,2}Department of Prasuti Tantra Evum Stri Roga, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India.

³Department of Shalya Tantra, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India

ABSTRACT

Labour involves a series of changes in genital organs associated with regular painful uterine contractions with effacement and dilatation of the cervix in order to expel the products of conception. The process of normal child birth depends on normalcy of power, passage and passenger. If any fault is there in power, passage and passenger labour will become abnormal leading to caesarean- section. According to classical references in *Ayurveda Prasava* or *Garbhaniskramana* is the main function of *Apanavayu*. Along with *Apanavayu*, *Vyanvayu* also takes part in induction of labour or *Avi*. If functions of *Apan Vayu* alters then it leads to *Vilambitaprasava*. **Incidence and Prevalance-** According to 2022 data of Shri Dharmasthala Manjunatheshwara college of Ayurveda and Hospital, Hassan 19.5% caesarean deliveries were conducted due to cervical dystocia and 17% were because of induction failure. In *Ayurvedic* classics different treatment modalities have been explained for achieving *Sukha Prasava* one among them is *Yoni Lepa* with *Kalka* of *Sukhaprasvakara* drugs. *Vasa* and *Apamarga* are among such drugs told by *Vangasena* and *Gada Nigraha*. As per previous non-clinical research work *Vasa* and *Apamarga* are proven to increase prostaglandin activity due to their phytoconstituents. Here in this study an attempt was made to modify the *Apamrga Vasa Moola Yoni Lepa* in gel form for easy applicability and to evaluate its effect on *Prasava*. **Design:** This is a Pilot study is conducted on 5 pregnant women in third trimester above 37 weeks gestation in latent phase of labour to evaluate the effect of *Apamarga Vasa Gel* application in on *Prasava*. *Apamarga Vasa gel* application in posterior fornix during latent phase of labour shown effective result by helping in cervical ripening in less hours and *sukhaprasava* with ease.

Key Words *Sukhaprasava*, *Bishop's score*, *Apamarga Vasa Gel*, *Yoni Lepa*

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INTRODUCTION

Safe childbirth is achieved through an uncomplicated pregnancy and easy delivery. Events of labour are divided into three stages.

First stage of labour starts from onset of true labour pain and end with full dilatation of cervix. First stage of labour is divided into latent and active phase. Latent phase of labour is the period

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between onset of true labour pain and the point when cervical dilatation becomes 5cm and its duration is about 20 hours in primigravida and 14 hours in multipara. The active phase of labour starts from 5 cm dilatation of cervix and ends with full dilatation. The rate of caesarean section delivery is on rise in India due to cervical dystocia, obstructed labour, fetal distress, and many more¹. According to WHO caesarian section should not exceed more than 10-15% in any nation². The prevalence of caesarean section in India was 17.2% in NFHS-4 while in NFHS-5 shows that it has increased to 21.5%³. According to 2022 data of Shri Dharmasthala Manjunatheshwara college of Ayurveda and Hospital, Hassan 19.5% caesarean deliveries were conducted due to cervical dystocia and 17% were because of induction failure. The incidence of caesarean section delivery and rate of uterine inertia is increasing due to lifestyle changes, elderly primigravida and intolerance of labour pain, obstructed labour, fetal distress etc. and hasn't contributed to an improved pregnancy outcome, maternal mortality and morbidity.

In contemporary science at present drugs like oxytocin, prostaglandins are used for induction and augmentation of labour. According to classical references in *Ayurveda* by following *Masanumasika Garbhini Paricharya* and judicial assessment of *Prasava* and application of *Prasava Paricharya*, *Sukha Prasava* can be achieved. Previously many studies were conducted on assessment of effect of *Navam Masa Paricharya* on *Prasava* and significant

effect was noticed on *Prasav Lakshan's*⁴. Other than *Masanumasika Garbhini parcharya*, different treatment modalities have been told by Acharya's for conduction of *Sukha Prasava* like *Yoni Abhyanga*, *Yoni Lepa*, *Yoni Dhoopana*, and *Yoni Purana* using drugs having *Ushna Teekshna* properties⁵. Among them *Apamarga* and *Vasa Moola Lepa* in *Yoni* is told by *Vangasena*, *Chakradatta* and *Gada Nigrah* in *Prasava*⁶⁻⁸. As per some research *Apamarga* and *Vasa* due to their phytoconstituents like saponins, tannins, flavonoids, vasicines are known to increase prostaglandins activity thereby stimulating uterine contractions⁹⁻¹⁰. So here in this study *Apamarga* and *Vasa Moola Churna* was made in gel form and administered in posterior fornix during latent phase of labour to evaluate its effect in the progress of first stage of labour.

AIM AND OBJECTIVE

To evaluate the effect of *Yoni Lepa* with *Apamarga Vasa* gel in *Prasava*

MATERIALS AND METHODS

A. Literary Data- Literary references were collected from Ayurveda classics, commentaries, modern literatures, research journals.

B. Clinical Data-

Selection of Drug-

According to textual description *Acharya's* have been told different drugs for *Sukha Prasava* among them *Vasa* and *Apamarga Moola Lepa* in *Yoni* is told by both *Vangasena* and *Gada*

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Nigraha. So in this study Apamarga and Vasa were selected as trial drug.

Preparation of Apamarga Vasa gel-

Drugs were collected and gel was prepared in pharmacy of Shri Dharmasthala Manjunatheshwara College and Hospital, Hassan.

Selection of Pregnant women-

In this study 5 pregnant women with true labour pains fulfilling both inclusion and exclusion criteria were selected from in-patient department of PG studies in *Prasuti Tantra Evum Stri Roga* department of Sri Dharmasthala Manjunatheshwara Ayurveda College and Hospital, Hassan

Inclusion Criteria-

1. Pregnant women age group between 19 to 30 years willing to take part in this study
2. Primigravida after 37 weeks of gestation
3. Single intrauterine gestation with vertex presentation.

Exclusion Criteria-

1. High risk pregnancy with hypertensive disorders, gestational diabetes mellitus, pulmonary diseases, renal diseases, psychiatric illness, cardiac disease, epilepsy, severe Anaemia.
2. Previous caesarean delivery
3. Diagnosed case of HIV, HBsAg, and VDRL.
4. Absolute indications of caesarean section.

Diagnostic Criteria-

Selected pregnant women having-

1. Adequate Pelvis
2. True labour pain
3. In latent phase of labour (upto 2-3 cm dilatation of cervix)

CASE PROFILE - All 5 subjects were primigravida

Assessment details of all 5 subjects at the time of admission are mentioned in Table 1

Table 1 Assessment at the time of admission

Cases	Age	POG	Per abdomen	EFW byUSG (gms)	Per vaginal	Bishop's score
Case 1	24 years	38 weeks 3 days	Uterus at term Relaxed FHS- Regular Fetal Movements +	2972 gms	Cervix- 3-4 cms dilated Effacement- 20-30 % Consistency- soft Position- posterior Head -3 station, Show+	4
Case 2	23 years	POG 39 weeks 1 day	Uterus at term Mild contractions+ 2-3/25-30"/10' FHS- Regular Fetal Movements +	3217gms,	Cervix- 2-3 cms dilated Effacement- 20-30 % Consistency- soft Position- anterior Head -3 station Show+	5
Case 3	19 years	39 weeks 2 days	Uterus at term Mild contractions+ 2-3/20-25"/10' FHS- Regular Fetal Movements +	2939 gms	Cervix- 2 cms dilated Effacement- 20-30 % Consistency- soft Position- anterior Head -3 station Show+	5
Case 4	25 years	40 weeks 4 days	Uterus at term Mild contractions+ 1-2/20-25"/10' FHS- Regular	2901 gms	Cervix- 2 cms dilated Effacement- 10-20 % Consistency- medium Position- posterior	2

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			Fetal Movements +		Head -3 station Show+	
Case 5	30 years	38 weeks 2 days	Uterus at term Mild contractions+ 3/20-25"/10' FHS- Regular Fetal Movements +	3182gms	Cervix- 1-2 cms dilated Effacement- 20 % Consistency- soft Position- posterior Head -3 station, Show+	3

Laboratory investigations

Routine Antenatal care investigations-

- Hemoglobin, Blood grouping, VDRL, HIV, HBsAg, Platelet count, RBS, Urine routine, BT, CT
- NT scan, Anomaly scan, Fetal Doppler

Intervention-

Apamarga Vasa Gel application was done vaginally in latent phase of labour for maximum of 3 doses with a gap of 6 hours. Detailed plan of treatment is mentioned in Table 2.

Table 2 Plan of treatment

TREATMENT MODALITIES	APPLICATION OF APAMARGA VASA GEL DEEP INTO POSTERIOR FORNIX
FORMULATION	APAMARGA VASA GEL
TIME	AFTER 37 WEEKS OF GESTATION
DURATION	MAXIMUM 3 DOSES AT INTERVAL OF 4 HOURS
DOSE	20ml



Image 1 Applying Apamarga Vasa gel under aseptic condition

Method of application- After evacuation of bladder participant was made to lie in lithotomy position. The tip of pre-filled syringe was inserted deep into posterior fornix of vagina and Apamarga Vasa gel was administered. Patient was instructed to lie in supine position for at least 30 minutes.

Application of Apamarga Vasa gel under aseptic condition is shown in Image-1

Assessment Criteria-

- Maternal and fetal wellbeing and progress of labour was assessed on standard parameters of Bishop's score and Partograph.
- Duration of first stage of labour was assessed.

A) Bishop's score - Detailed scoring method for Bishop's score is given in table-3

BISHOPS SCORE	0	1	2	3
Position of Cervix	Posterior	Midline	Anterior	-
Cervical consistency	Firm	Medium	Soft	-
Cervical effacement	0-30%	40-50%	60-70%	>80%
Cervical dilation (in cm)	Closed	1-2 cm	3-4 cm	>5cm
Head station	-3	-2	-1,0	+1,+2

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RESULT AND DISCUSSION

Bishop’s score of all 5 subjects at admission and after intervention at different interval of time is mentioned in Table-4

Table 4 Bishops Score assessment at different interval

Cases	On admission	1 st Assessment	2 nd Assessment	3 rd Assessment
Case-1	4	8	9	12
Case-2	5	8	11	13
Case-3	5	7	7	10
Case-4	2	5	6	10
Case-5	3	5	5	8

Delivery details- Mode of delivery and duration of stages of labour is mentioned are Table-5

Table 5 Mode of delivery with stages of labour

Cases	Mode of delivery	Baby Details	Duration of Stages of labour
Case 1	FTND with RMLE	3285 grams	1 st stage- 10 hours 5 mins 2 nd stage- 28 minutes 3 rd stage- 5 minutes
Case 2	FTND with RMLE	2455 grams with single loop of cord around neck	1 st stage-15 hours 50 minutes 2 nd stage- 6 minutes 3 rd stage- 10 minutes
Case 3	FTND with RMLE	3245 grams	1 st stage-25 hours 30 minutes 2 nd stage- 26 minutes 3 rd stage-7 minutes
Case 4	FTND with RMLE	3760 grams	1 st stage- 20 hours 2 nd stage- 1 hour 3 mins 3 rd stage- 5 mins
Case 5	Cesarean section due to augmentation failure with fetal distress	3980 grams with single loop of cord around neck	-

DISCUSSION

- Four subjects were delivered with vaginal delivery with maximum 3 dose application of *Apamarga Vasa* gel and one subject was ended up in caesarean section delivery due to augmentation failure with fetal distress but a marked improvement was noticed in Bishop’s score of all 5 subjects.

- Apamarga* and *Vasa* contains chemical constituents like phytosteroids, saponins, tannins, flavonoids, polyphenols, vasicines which are known to increase the prostaglandin activity thereby may increase uterine contractions⁹. According to experimental studies on *Apamarga* the extract of whole plant had shown an

abortifacient effect in mice and vasicine showed abortifacient effect in guinea pigs.¹⁰ *Apamarga* is having *Vata Hara* property and when applied in gel form gets directly absorbed in yoni which normalized *Apan Vata* leading to *Sukha Prasava*. According to a study vasicine potentiated prostaglandin-induced uterine contractions in rats¹⁰. So due to these properties *Apamarga Vasa* gel had shown significant effect on *Prasava*.

- Effect on 1st stage of labour-** In all 5 subjects average duration of 1st stage of labour was 15-20 hours. Due to tonic effect of *Apamarga Vasa* gel a marked reduction in first stage of labour was noticed.

- Effect on Bishop’s score-** Due to the above chemical constituents *Apamarga Vasa* gel

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helped in shortening the duration of first stage of labour, as these drugs helped in increasing uterine contractions in turn favoring the cervical dilatation, effacement, position and head station. So a marked improvement in Bishops score of all 5 subjects was noticed.

- No toxic effect was seen on mother and baby during this study trail.

CONCLUSION

Apamarga Vasa gel application in latent phase of labour shown effective results by reducing the duration of first stage of labour and marked improvement in Bishops score was noticed. Overall it helped in progress of labour and reduced exhaustion of labour which is ultimate aim of every pregnant women. Hence *Yoni Lepa* with *Sukhaprasavakara* drugs can be applied as an SOP for progression of labour and conduction of *Sukha Prasava*.

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REFERENCES

1. Dutta D.C., (12th chapter) normal labor, Konar H(editor), Text book of obstetrics, 7th edition, Calcutta, New central book agency.
2. Betran AP, Torloni MR, Zhang J, Ye J, Mikolajczyk R, Deneux-Tharaux C, Oladapo OT, Souza JP, Tunçalp Ö, Vogel JP, Gülmezoglu AM. What is the optimal rate of caesarean section at population level? A systematic review of ecologic studies. *Reprod Health*. 2015 Jun 21; 12:57. doi: 10.1186/s12978-015-0043-6. PMID: 26093498; PMCID: PMC4496821.
3. National Family Health Survey: Neary 50% deliveries in pvt facilities [Internet]. The Indian Express; [cited 2021, Nov 26, 7:24:10 AM]. Available from: <https://indianexpress.com/article/cities/pune/birth-s-private-facilities-c-section-nfhs-data-7641816/lite/>
4. Dr Deepthi G.B. and Dr. Gayathri Bhat N.V. “Comparative clinical study on Navam Maasa Paricharya with Mahanarayana taila and Ksheerabala taila on Prasava Lakshanas.” *World journal of pharmacy and pharmaceutical sciences*, vol. 11, jan 2022. DOI: 10.20959/wjpr20222-20908
5. Prasuti evam streeroga by P.V.Tiwari, chaukamba orientalia, Varanasi, Reorint 2023, part-1, 8th chapter, p-442
6. Hariprasad Tripathi, Vangsen Samhita ‘Hari’ hindi vyakhya sahit Chapter Mahilarogadhikar 18 / 234. Page no. 212, Chaukhamba samskrit series office Varanasi.
7. Dr.Indradev Tripathi; Gadanigraha of Shri Vaidya Sodhala ShalakyadiPanchkarmadhikarato Vol. 3 Kaumartantre Mudhagarbhadhikar 4/28 page no. 484. Chaukhamba Sanskrit sansthan, Varanasi
8. P.V. Sharma; Kashi Ayurveda series Chakradatta- A treatise on principal and practices of Ayurveda Medicine. Chapter Striroga chikitsa 63/ 13, 17 Page No. 538 Chaukhamba Orientalia. Delhi
9. Dravya Guna Vignan by J.L.N Shastry, chaukamba Sanskrit Sansthan, Varanasi, Apamarga drug, pg-443, 444, 445, 446
10. Dravya Guna Vignan by J.L.N Shastry, chaukamba Sanskrit Sansthan, Varanasi, Vasa drug, pg-406, 407, 408, 409, 410