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Effect of Ayurvedic preparation on stages of labor - A Clinical Study

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ABSTRACT

The process of giving birth to young ones is becoming complicated day by day. Different serious conditions were faced by females during the phenomenon of labor. The present clinical trial is a small but an effective effort to facile the complicated process of labor. It aims to reduce the intensity of pain with duration of the labour, to decrease the frequency of caesarean section and application of forceps at the time of delivery. To facilitate the phenomenon of labor (*Sukh-Prasava*) *Acharya Charaka* indicates the use of *Anuvaasana basti* and *picchu* of *taila* medicated of *madhura gan dravyas* during ninth month of pregnancy. In this study *tila taila murchit* by *madhura gana dravyas* mixed with *kwatha* of four self assumed (*kalpit dravyas*) named *Sukh-Prasava taila* is used for soothing the phenomenon of labor. The 30 patients (Primigravida) were selected randomly, which were given *Anuvaasana basti* fortnightly and *Picchu* daily from the beginning of 9th month till delivery with *Sukh-Prasava taila*. All routine laboratory investigations were also assessed. The patients treated with *Sukh-Prasava taila* had shown better results by successfully decreasing the standard mean duration of all the three stages of labour with intensity of pain.

Key words: *Sukh-Prasava Taila, Picchu, Anuvassana Basti, Labor.*

INTRODUCTION

In *Ayurveda* there is detailed description about how to live a quality and disease free daily life under heading *Dincharya*.^[1] The fact which is known to all is that, the segment of pregnancy and the phase of giving birth to young ones are the most problematical, critical and complex time of a woman's life. This critical stage starts from the very commencement of conceiving or when fertility occurs. During this significant stage each

women undergoes a progression of emotional, mental and physical changes which persist all the way through pregnancy. *Acharya Charak* described "*Garbhini Paricharya*" in detail in which there is explanation of *Ahara* (diet), *Vihara* (life style) and *Vichara* (thought process) is mentioned which were to be followed by pregnant woman during pregnancy so that she will be able to deliver a child with good health with ease.^[2] In *Shushrut Samhita Acharya Sushrut* also illustrate the procedure of *Prasava* (delivery) and state that as a mature fruit naturally isolate from the stalk itself on the right course of time, in the same way *Garbha* (foetus) in its suitable time, also separate from its *Nadinibandha* (Umbilical chord) and progress for *Prasava*.^[3] In classical text of *Ayurveda*, the accurate duration of *Prasava* (normal delivery) is not visibly mentioned but the adverse effects and their methods of management were talked about under heading *vilambita prasava*.^[4] For *Sukha Prasava* i.e. uncomplicated and normal delivery *Acharya Charaka* has mentioned the use of *Anuvaasana Basti* and *Pichu* of oil medicated with

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Madhura Gana Dravyas from the beginning of ninth month of pregnancy.^[5]

The phase of pregnancy is very crucial phase and a correlation is made by *Acharya Charak* in perspective of a pregnant lady. *Acharya Charak* correlate a pregnant lady with a oil filled vessel and its minor fluctuation can result in spillage of oil. It can be explained as that a slight deviation in *Aahara* and *Vihara* of a pregnant lady may worsen or imbalance the *Doshas* and can cause adverse effects *Garbha*.^[6] That's why *Garbhini Paricharya* has its immense significance in *Ayurvedic* literature and in current sciences also. As per the theory described in *Ayurveda* during the process of *labor* there is aggravation of *Vata Dosh* out of three *Doshas*. This is due to obstruction of *Garbha* and the *Nishkramana Kriya* of *Garbha* is effected which is to be performed by *Apana Vayu*.^[7] So to normalise the function of *Vata* the use of *Taila* and *Madhur Dravyas* as *Anuvasana Basti* and *Pichu* is done which act as the best *Shaman Aushadhi* of *Vata*.^[8] As it is mentioned that *Acharya Charaka* has recommended the use of *Anuvaasana Vasti* by the side of *Yoni Picchu* in the 9th month of pregnancy for lubrication of *Garbhasthana*^[5] that is uterus but here cervix and *Garbha Marga* which symbolize vaginal canal and perineum. Throughout the phase of pregnancy, *Vayu Dosh* is most likely to be vitiated. To normalise the upset *Vayu Dosh* *Acharya Charaka* has mentioned *Vasti* as *Ardha Chikitsa*^[9] and *Vasti* is explained as complete *Chikitsa* to suppress aggravated *Vata Dosh* by some other *Acharyas* also.

Vasti is one of the five procedures of *Panchakarma*, which includes the administration of medicated *Kwath Dravyas*, oils and fats into the body through anal rout. The *Vasti* in which *Sneha* (oils or *Ghrita* medicated with herbs) is used as main liquid medicine then it is known as *Anuvaasana Vasti*. *Acharya Shushrut* has explained it as *Snaihika Vasti*.^[10] Depending on the quantity of *Sneha* administered *Anuvaasana Vasti* is divided into three types: *Sneha Vasti*, *Matra Vasti* and *Anuvaasana Vasti*. The *Vasti* in which the medicines are used in a dose equal to lowest dose of intake of medicated fats or oil it is called *Matra Vasti*.^[11] The quantity of medicated

Sneha Dravya is very less and administered in a dose of half of that of *Anuvaasana Vasti* (1/2 of 3 *Pala* i.e. 1½ *Pala* which is approximately 72 grams).^[12] It endorse strength, makes the stool and urine to move in proper course, normalise the aggravated *Vata Dosh* and provide comfort to the body.^[13] The *Brihatrayi* give importance to follow *Garbhini Paricharya* for the normal and uncomplicated delivery^[2] and the role of *Apana Vayu* in normal labour is also mentioned.^[7] Administration of *Taila* by *Anuvaasana Basti* helps to relieve the *Rukshata* of *Vayu* by its *Snigdha Guna*, *Laghuta* by its *Guru Guna*, *Sheetata* of *Vayu* by its *Ushna Guna*.^[14] With the proper use of *Anuvaasana Vasti Vayu* moves in right direction i.e. *Vatanulomana* so the pregnant women delivers easily without any problem. In the current clinical trial to ease down the phenomenon of labor, along with *Anuvaasana Vasti Picchu* is also used. *Picchu* a type of oilation treatment or *Snehan* of a particular localize part of body. *Picchu* is made up with a cotton swab. Small round cotton swabs were dipped in medicated oil and positioned intensely within the vagina, intact with cervix (*Yoni*) for the *Snehana Karma* is called as *Yoni Picchu*. As per the definition of *Snehana* according to *Acharya Charak*, it results in *Snehana karma* (unctuousness), *vishyandana* (fluidity), *mardavata* (softness) and *kledana* (moistness) of body.^[15] *Anuvaasana Vasti* and *Yoni Picchu* of medicated oil is *Vatashamak* and grounds the smoothness in channels and tissues which enhance the flexibility of muscles and thus smooth the progress of easy expulsion of the foetus without any obstruction.

Here the clinical trial of an *Ayurvedic* preparation with main base as *Tila Taila* is conducted on 30 registered patients. The preparation is named as *Sukh-Prasava Taila* which is medicated with *Madhura Gana Dravyas* and four *Kwath Dravyas*. *Sukh-Prasava Taila* is given as *Anuvaasana Basti* and *Pichhu* to the patients from the beginning of 9th month (32 weeks) of pregnancy. It maintains the *Vata Dosh* in *Samaya Avastha* which is aggravated during labor pains^[8] which in the end results in dropping the intensity of labor pain and reduces the duration of all the three stages of labor.

AIMS AND OBJECTIVES

1. To study the effect of a *Kalpita* (self assumed) preparation named as *Sukh-Prasava Taila* on three stages of labor concerning its stage wise duration and intensity of pain.
2. To study and evaluate its effect on prevalence of caesarean section, forceps application and necessity of episiotomy.
3. To prepare the patient psychologically for comfortable and easy labor.
4. To observe the patient for any problem that takes place after treatment.

MATERIALS AND METHODS

Selection of drug

Acharya Charak mentioned the use of *Auvaasana Basti* and *Yoni Pichu* with oil medicated with the drugs of *Madhura Gana* in the 9th month of pregnancy.^[5]

Preparation of drug

The trial drug is prepared in *Charak* pharmacy of R.G.G.P.G. Ayurvedic College Paprola, under direction of *Rasa Shastra* Department of the College. In the beginning the *Murchhana* of *Tila Taila* is done with the *Kalka* of *Madhura Gana Dravyas*^[16] as mentioned in table 1. Then *Sukh-Prasava Taila* is prepared with *Taila Paka Vidhi*^[17] by adding *Kwatha* of four drugs as mentioned in table 2.

Table 1: Madhura Gana Dravyas for Murchhana of Sukh-Prasava Taila

SN	Drug	Botanical Name	Quantity
1.	<i>Tila Taila</i>	<i>Sesamum indicum</i>	4 liters
2.	<i>Manjistha</i>	<i>Rubia cordifolia</i>	250 grams
3.	<i>Amalaki</i>	<i>Emblia officinalis</i>	60 grams
4.	<i>Vibhitak</i>	<i>Terminalia bellirica</i>	60 grams
5.	<i>Haritaki</i>	<i>Terminalia chebula</i>	60 grams
6.	<i>Tvaka</i>	<i>Cinnamomum cassia</i>	60 grams

7.	<i>Ketaki</i>	<i>Pandanus fascicularis</i>	60 grams
8.	<i>Musta</i>	<i>Cyperus rotundus</i>	60 grams
9.	<i>Lodhra</i>	<i>Symplocos racemosa</i>	60 grams
10.	<i>Vata</i>	<i>Ficus benghalensis</i>	60 grms
11.	<i>Haridra</i>	<i>Curcuma longa</i>	60 grams
12.	<i>Hriber</i>	<i>Juniperus communis</i>	60 grams

Table 2: Kwatha Dravyas for Sukh-Prasava Taila

SN	Drug	Botanical Name	Quantity
1.	<i>Eranda moola</i>	<i>Ricinis communis</i>	1 part
2.	<i>Ashwagandha moola</i>	<i>Withania somnifera</i>	1 part
3.	<i>Sariva moola</i>	<i>Hemidesmus indicus</i>	1 part
4.	<i>Guduchi</i>	<i>Tinospora cordifolia</i>	1 part
5.	<i>Murchhitta Tila Taila</i>	<i>Sesamum indicum</i>	16 part

Selection of patient

In the present clinical study 30 registered patients were selected who full fills the inclusion criteria and after their consent they were randomly selected from the OPD and IPD of P.G. Deptt. of Prasuti Tantra avum Stree Roga of R.G.G.P.G.Ayu. College and Hospital, Paprola, (H.P)

Inclusion criteria

1. Pregnant women who were willing for trial and primigravide between 32-36 weeks of pregnancy were randomly selected for the trial with age group between 20-35 years.
2. Patients having adequate pelvis, border line pelvis and cephalic presentation.

Exclusion criteria

1. Patient not willing for trial.
2. Age group < 20 years and > 35 years.
3. Patients having cephalopelvic disproportion, absolute contracted pelvis, history of APH and Malpresentation.

- Patients having systemic disease like diabetes mellitus, hypertension, tuberculosis, jaundice, heart disease, epilepsy, ascitis.
- Disease related to pregnancy like eclampsia, preeclampsia, polyhydramnios etc.
- Malignancy of genital tracts.

Plan of study

A detailed research Performa (case history sheet) was prepared to note down all the details of the patients and disease. All the 30 patients were given *Anuvaasana Basti* and *Yoni Pichu* as per the following schedule.

Patients were given *Anuvaasana Basti (Matra Basti)* fortnightly and *Yoni Pichu* daily till delivery with *Sukh-Prasava Taila*.

Anuvaasana Basti (Matra Basti) - 60 ml

Yoni Pichu - Soaked with *Sukh-Prasava Taila*

Parameter for assessment of the Study

Clinically the result was assessed by observing whether the patient had *Sukha* and *Nirupadrava Prasava* or not. For this evaluation, following criteria of scoring and criteria for assessment of therapy were adopted;

1. Onset of labor

Onset of labor	Score
Spontaneous labor pain	0
Induced labor pain	1

2. Intensity of pain during labor

Intensity of pain during labor	Score
Moderate	0
Mild	1
Severe	2

Grading for intensity of pain during labor was done according to the history given by the patients (verbal rating scale).

3. Pattern of F.H.R.

Pattern of F.H.R.	Score
FHR between 110-160/min.	0
Fetal tachycardia (>160/min.)	1
Fetal bradycardia (<110/min)	2

4. Pattern of Partograph

Pattern of Partograph	Score
Before alert line	0
Between alert and action line	1
On or after action line	2

5. Mean Duration of labor

It is calculated by total time period that is taken for all the three stages labor.

Mean Duration	Score
Less than mean duration	0
Equal to mean duration	1
More than mean duration	2

6. Type of delivery

Type of delivery	Score
Normal vaginal delivery without episiotomy	0
Normal vaginal delivery with episiotomy	1
Forceps delivery	2
L.S.C.S.	3

7. Postpartum hemorrhage

Postpartum hemorrhage	Score
No PPH	0
Third stage PPH	1

True PPH	2
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Table 3: Gradation Index: On the basis of assessment criteria patients were given following Grades

SN	Criteria	Grade I	Grade II	Grade III	Grade IV
1.	Onset of labor	0	0	0 or 1	0 or 1
2.	Intensity of pain	0	0	0 or 1	1 or 2
3.	F.H.R.	0	0	0 or 1	1 or 2
4.	Partograph	0	0	1	2
5.	Mean duration of stages	0	0	1	2
6.	Type of delivery	0	1	2	3
7.	Postpartum hemorrhage	0	0	0 or 1	0,1 or 2

Grade I (score not >0): Patients having Spontaneous Normal vaginal delivery with spontaneous onset of labor, moderate uterine contractions, FHR 110-160/min, partograph before alert line, duration of stages less than standard mean duration and no PPH.

Grade II (score not>1): Patients having Normal vaginal delivery with episiotomy, spontaneous onset of labor, moderate uterine contractions, FHR 110-160/min, partograph before alert line, duration of stages less than standard mean duration and no PPH.

Grade III (score not>9): Patients having vaginal delivery assisted with forceps, onset of labor either spontaneous or induced, uterine contractions mild or moderate, FHR 110-160/min or >160/min or <110/min., partograph between alert and action line, duration of stages equal to standard mean duration or more with or without PPH.

Grade IV (score not>15): Patients having delivery by LSCS, onset of labor either spontaneous or induced, uterine contractions mild, moderate or severe, FHR 110-160/min or >160/min or <110/min. partograph on or after action line, duration of stages greater than standard mean duration, with or without PPH.

Criteria for assessment of overall effect of therapy according to gradation index

Grade I	-	Marked
Grade II	-	Moderate
Grade III	-	Mild
Grade IV	-	No effect

Laboratory Investigations

- Haematological examination - Hb gm%, Blood group with Rh factor, TLC, DLC, ESR, BT, CT, HIV, VDRL, HBsAg, FBS, Lipid profile, LFT, Blood urea, S.Creatinine.
- Urine - Routine and Microscopic examination.
- Ultrasonography

Statistical Analysis

Analysis of data was done on the basis of criteria of assessment and gradation index and interpreted statistically in form of mean score and its comparison with the standard values using student's paired-t test. The student's paired-t test is used to compare the value of significance in the same group (of 30 or less than 30) at two different occasions. Results were considered significant or insignificant depending upon the value of 'p'

Highly significant	p<0.001
Significant	p<0.01;
Significant	p < 0.05
Insignificant	p>0.05

OBSERVATIONS

Present study was conducted on 30 registered patients. Out of which 2 patients discontinue before delivery. So, among total 30 patients included in the study, maximum 73.33% patients belong to age group 20- 25 yrs. 96.66% patients belong to Hindu community. Maximum 63.33% patients had education up to higher secondary. 86.66% were housewives, 60% patients belongs to middle class. Maximum 50% patients had constipation. Maximum 60% patients had normal psychological status. Maximum 70% were

vegetarian. 93.33% patients were having sound sleep. Maximum 66.66% patients were of *Vata-kapha Prakriti*. Maximum number of patients i.e. 86.66% was of *Madhyam Samhanana*. Maximum 76.66% of patients were of *Madhyam Satva*. Maximum 96.66% of patients had regular past menstrual cycle and normal appetite. Maximum 60% of patients were registered at 32-34 weeks of gestational period. Maximum 86.66% of patients had *Basti Pratyagamana Kaala* of 2 to 4 hours.

RESULTS

Table 4: Comparison of Standard mean duration of three stages of labor with mean duration of three stages of labor in 28 patients.

Standard labor	Standard mean duration	Mean duration of three stages of labor in 28 patients	S.D.	S.E.	T	P
Stage (I)	13.3 (13hr. 8min)	7.37 (7hrs 22min)	1.66	.320	18.40	<0.001
Stage (II)	0.95 (57min)	0.43 (25min 44sec.)	8.95	1.72	18.13	<0.001
Stage (III)	0.25 (15 min)	0.06 (3min 25sec.)	0.928	0.189	61.10	<0.001

Table 5: Effect of therapy on type of delivery in 28 patients

SN	Type of Delivery	No. of Patients	Percentage
1.	Normal	15	53.57%
2.	Episiotomy	11	39.29%
3.	Use of Forcep	01	3.57%
4.	L.S.C.S.	01	3.57%

Table 6: Effect of therapy on intensity of pain during first and second stage labor in 28 patients

Intensity of Pain	During First Stage of Labor		During Second Stage of Labor	
	N	%	N	%
Mild	04	14.29%	01	3.57%
Moderate	24	85.71%	26	92.85%
Severe	00	00	01	3.57%

N - No. of Patients, % - Percentage

Table 7: Overall Result of therapy in 28 patients

SN	Result	Effect of therapy	No. of patients	Percentage
1.	Grade-I	Marked	15	53.57%
2.	Grade-II	Moderate	11	39.29%
3.	Grade-III	Mild	01	3.57%
4.	Grade-IV	No	01	3.57%

Out of 28 patients 53.57% patients showed marked effect of therapy, 39.29% patients showed moderate effect of therapy then 3.57% patients showed mild effect of therapy and 3.57% patient showed no effect of therapy.

DISCUSSION

The present clinical trial was done on 30 patients and completed by 28 patients. The medicine used in the trial for *Anuvasana Basti* and *Pichu* is *Sukh-Prasava Taila*. The trial drug was prepared by the *Tila Taila* as base which is medicated with the *Kalka* of *Dravyas* of *Madhur Gana* and later on the *Kawath* of four *Dravyas* is added. The medicine *Sukh-Prasava Taila* shows significant ($p < 0.05$) results after statistical analysis of assessment criteria but no significant changes were observed in the laboratory investigations. It is the effect of trial drug that all the

patients had spontaneous nature of labour, maximum with normal and episiotomy mode of delivery and it extremely reduces the standard mean duration of all the three stages of labour which ultimately helps in reducing the intensity of pain and discomfort during the three stages of labor.

At normal term pregnancy the phenomenon of birth is accomplished by a corresponding ripening and dilatation of cervix, go together with the uterine contractions and descent of presenting part. The cervical ripening is the result of rearrangement of collagen, deprivation of collagen cross linking due to proteolytic enzymes. *Tila Taila* which is the main content of *Sukh-Prasava Taila* has high percentage of poly-unsaturated fatty acid (omega-6 fatty acid). Prostaglandins induce pain signals, regulation of inflammation and maintenance of tissue. The role of fatty acid in cervical ripening and parturition has been established. Further local application of *Sukh-Prasava Taila* in form of *Yoni Pichu* restores moisture of genital tract. The other constituents of *Sukh-Prasava Taila* increases the secretion of lysozymes and granular enzymes which increase the collagenolytic activity finally results in cervical ripening.^[18] At the other end *Anuvaasana* and *Matrabasti* got the property to control sympathetic activity by regulating adrenaline and noradrenaline secretions and helps in maintaining the balance of A.N.S.^[19] which regulates myometrium and in the end ultimately helps in labor.^[20] The Ferguson reflex is an example of positive feedback and response of female body to pressure application in the cervix or vaginal walls. On application of pressure, oxytocin is released and uterine contractions are stimulated (which will in turn increase oxytocin production, and hence, increase contractions even more) until the baby is delivered. Oxytocin acts on myometrium, on receptors which have been upregulated by an increasing estrogen-progesterone ratio.^[21] The administration of *Yoni Pichu* apply a mild and continuous stretching pressure on the cervix and vaginal wall. So there may be possibility that this pressure may cause the Ferguson reflex in the mild form and consequently help in cervical ripening.

CONCLUSION

The current study was designed to evaluate the effect of a *Kalpita* (self assumed) preparation i.e. *Sukh-Prasava Taila* on three stages of labor regarding its stage wise duration and intensity of pain. The study reveals that the use of *Sukh-Prasava Taila* for *Anuvaasana Vasti* and *Yoni Pichu* decreases the duration of all the three stages of labor significantly and also reduces the intensity of pain during labor.

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