



**EFFECT OF TWO AYURVEDIC PREPARATIONS ON THE PHENOMENON OF  
LABOR: A COMPARATIVE CLINICAL STUDY**

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**ABSTRACT**

Now days the word *Ayurveda* is almost known to everyone and is the oldest science serving the humanity till from the beginning of life on this earth. Through the present clinical trial a small effort is made to prove the above words. This clinical study helps to reduce the pain felt by every woman during labour. This study aims to reduce the intensity and duration of the labour pain and also the incidence of caesarean & forceps application during delivery. The study has great positive effects on the phenomenon of labour. *Acharya Charaka* mentioned *Anuvaasana basti & picchu* of *taila* treated with *dravyas* of *madhura gana* in the ninth month of pregnancy for *Sukh-Prasava*. The trial was done by the two *murchit tailas* by *madhura gana* named *Balyam-1 and Balyam-2 (Kalpit yoga)*. The patients (*Primigravida*) were selected randomly in Group-A and Group- B, which were given *Anuvaasana basti* fortnightly & *Picchu* applied daily till delivery with *Balayam-1 & Balayam-2 taila* respectively. The group treated with *Balyam-2 taila* had shown better results by reducing effectively standard mean duration in the first stage of labour as compared with *Balyam-1 taila*.

**KEYWORDS:** *Picchu, Anuvasana Basti, Balyam Taila, Labor.*

**INTRODUCTION**

In *Ayurvedic* text the *Acharyas* described "*Garbhini Paricharya*" in detail in which there is description 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.<sup>[1]</sup> As we know the phase of pregnancy and the stage of giving birth to young ones are the most complicated, crucial and difficult time of a woman's life. From the moment of conceiving or when fertility occur the pregnant women undergoes a series of emotional and physical changes which continues throughout the pregnancy. The symptoms of pregnancy and the level of difficulty experienced are different for every woman. In *Charak Samhita Acharya Charaka* has mentioned *Anuvaasana Basti* and *Pichu* of oil medicated with *Madhura gana dravyas* in the ninth month of pregnancy for *sukha* and *nirupdrava prasava*.<sup>[2]</sup> *Acharya Sushruta* also described the process of *prasava* and says that as a ripened fruit naturally detaches from its stalk at its own course of time, similarly *Garbha* in its appropriate time, also detaches from its *Nadinibandha* and proceeds for *prasava*.<sup>[3]</sup> In *Ayurveda*, the duration of *Prasava* is not

clearly mentioned, it varies according to different *acharyas* but the deleterious effects and methods of treatment of *vilambita prasava* were mentioned.<sup>[4]</sup> But in *Bandhya Kalpadruma*, the duration of labor has been mentioned as 4-5 *Praharas* (12- 15 hrs.).

*Acharya Charak* correlate a pregnant lady with a oil filled pot and a slight oscillation can cause spillage of oil which means a slight deviation *aahara* and *vihara* of a pregnant lady may *aggravate* the *doshas* and can cause adverse effects *garbha*.<sup>[5]</sup> So that is the reason the *acharyas* has described *garbhani paricharya* with great importance in *ayurvedic* texts. According to the concepts of *ayurveda* during the process of *labor* out of three *doshas* there is aggravation of *vata dosha* due to obstruction of *garbha* and the *nishkramana kriya* of *garbha* is effected which is to be performed by *apana vayu*. So in order to normalise the function of *vata* the use of *taila* and *madhur dravyas* as *anuvasana basti* and *pichhu* is done which act as the best *shaman aushadhi* of *vata*.<sup>[6]</sup>

*Acharya Sushruta* has prescribed *Asthapana & Anuvaasana vasti* in the 8<sup>th</sup> month<sup>3</sup> while *Acharya*

Charaka has advised *Anuvaasana vasti* along with *yonipicchu* in the 9<sup>th</sup> month of pregnancy for Lubrication of *garbhasthana*<sup>[2]</sup> (uterus but here cervix) and *garbhamaarga* (vaginal canal and perineum). Acharya Charaka has mentioned, during the period of pregnancy, *vayu* is most likely to be vitiated and he has glorified *vasti* as *Ardha chikitsa*<sup>[7]</sup> and complete *Chikitsa* by some other Acharyas.

*Vasti* using oils medicated with herbs is called *Anuvaasana vasti*. *Matra vasti* is a type of *Anuvaasana vasti*. In *matra vasti* the quantity of *Sneha dravya* is very less (1½ *Pala*). It promotes strength, makes the stool and urine to move in proper direction and cures *vata roga* gives *sukha*.<sup>[8]</sup> The *Brihatrayi* gives emphasis on *Garbhini Paricharya* for the easy delivery and it is also mentioned the function of *apana vayu* in normal labour. Administration of *taila* by *Anvvaasana Basti* counteracts the *Rukshata* of *vayu* by its *snigdha*, *Guruta* counteracts the *Laghuta* and by its *Ushnata* counteracts the *sheetata* which are produced due to vitiated *vayu*.<sup>[9]</sup> By *Anuvvaasana vasti* *vayu* moves in right direction i.e. *vatanulomana* and hence pregnant women delivers easily at proper time without any complication. *Picchu* is a type of *Snehan* – oileation therapy. *Picchu* is made with the cotton swap. Small tampons dipped in medicated oils are placed deeply inside the vagina and intact with cervix (*yonipicchu*) for the *snehana karma* called as *yonipicchu*. According to Acharya Charak as per the definition of *snehana* it results in *Snehana karma* (unctuousness), *vishyandana* (fluidity), *mardavata* (softness) and *kledana* (moistness) of body.<sup>[10]</sup> *Anuvaasana vasti* and *yonipicchu* with medicated oil is *vatashamak* and causes softness in the channels and tissues and increases the elasticity of muscles and thus facilitates easy expulsion of the fetus without any obstruction.

The present study is the comparative clinical study of two *kalpit* ayurvedic preparations with *tilla taila* as a base. The preparations were named as *Balyam 1* and *Balyam 2* which were medicated with *madhura gana dravyas* but

with different *kwath dravyas*, were clinically compared on patients of Group A and Group B. Both *Balyam 1* and *Balyam 2* were given as *anuvvaasana basti* and *pichhu* to the patients of Group A and Group B respectively from the beginning of 9<sup>th</sup> month (32 weeks) of pregnancy. It will helps in keeping the *vata dosha* in *samaya avastha* which is aggravated during labor pains<sup>[6]</sup> and it ultimately results in reducing the intensity of labor pain and decreases the duration of stages of labor.

#### AIMS AND OBJECTIVES

- To study and compare the effect of two separate *kalpit* preparations *Balyam 1* and *Balyam 2* on phenomenon of labor regarding its stage wise duration and outcome.
- To study and compare their effect on incidence of caesarean section, forceps application and requirement of episiotomy.
- Psychological preparation of the patient for comfortable labor
- Monitoring of the patient for any complication arising after treatment.

#### MATERIAL AND METHODS

##### Selection of drug

Acharya Charak has advised use of *Anuvvaasana basti* and *Pichhu* with oil prepared with the drugs of *Madhura Gana* in the 9<sup>th</sup> month.<sup>[2]</sup>

##### Preparation of drug

Both the trial drugs were prepared in Charak pharmacy of R.G.G.P.G. Ayurvedic College Paprola, under supervision of *Ras Shashtra* Department of the college. Initially the *murchhana* of *Tila Taila* for both *Balyam 1* and *Balyam 2* were done with the *kalka* of *madhur gana dravyas* as mentioned (Table 1) according to *Bhaishajya Ratnavali*.<sup>[11]</sup> Then *Balyam taila 1* and *Balyam taila 2* were prepared with *Taila paka vidhi*<sup>[12]</sup> by adding *kawath* of different drugs as mentioned in table 2 and table 3 respectively.

**Table 1: Dravyas for Murchhana of Balyam taila 1 and Balyam taila 2.**

S.no.	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>Emblica 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 Balyam taila 1.**

S.no.	Drug	Botanical Name	Quantity
1.	Bala	<i>Sida cordifolia</i>	1 part
2.	Shalaparni	<i>Desmodium gangeticum</i>	1 part
3.	Vidari	<i>Pueraria tuberosa</i>	1 part
4.	Murchhitta Tila Taila	<i>Sesamum indicum</i>	12 part

**Table 3: Kwatha Dravyas for Balyam taila 2.**

S.no.	Drug	Botanical Name	Quantity
1.	Eranda moola	<i>Ricinis communis</i>	1 part
2.	Ashwagandha moola	<i>Withania somnifera</i>	1 part
3.	Sariva moola	<i>Hemidesmus indicus</i>	1 part
4.	Guduchi	<i>Tinospora cordifolia</i>	1 part
5.	Murchhitta Tila Taila	<i>Sesamum indicum</i>	16 part

**Selection of patient**

In the present comparative clinical study 60 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.). The randomly selected 60 patients were randomly divided into two groups Group A and Group B.

**Inclusion criteria**

- 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.
- Patients having adequate pelvis, border line pelvis and cephalic presentation.

**Exclusion criteria**

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

**Parameter for Evaluation of the Study**

Clinically the result of both Group A and Group B 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**

Spontaneous labor pain	Score
Induced labor pain	0
	1

**2. Intensity of pain during labor**

Moderate	Score
Mild	0
Severe	1
	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.**

FHR between 110-160/min.	Score
Fetal tachycardia (>160/min.)	0
Fetal bradycardia (<110/min)	1
	2

- 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 60 patients were randomly divided into two different research groups and *anuvaasana basti* and *yoni pichu* will be given to them as per the following schedule.

Group A - Patients of this group were given *Anuvaasana basti (matra basti)* fortnightly and *Yoni Pichu* daily till delivery with *balyam tail 1*.

Group B - Patients of this group were given *Anuvaasana basti (matra basti)* fortnightly and *Yoni Pichu* daily till delivery with *Balyam taila 2*.

*Anuvaasana basti (matra basti)* - 60 ml  
*Pichu* - Soaked with  
*Balyam taila I and II*

4. 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

On the basis of assessment criteria patients were given following Grades.

**Table 4: Gradation Index**

Sr.No.	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

**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.

**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.

**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.

**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.

#### 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 unpaired '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. For inter group comparison (Between Group A and Group B) the student's unpaired -t test is used to compare the value of significance. 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 AND RESULTS

Present study was conducted on 60 registered patients which were equally divided into Group A and Group B

out of which 5 patients discontinued before delivery 3 from Group A and 2 from Group B. So, among total 60 patients included in the study, maximum 78.33% patients belong to age group 20- 25 yrs. 98.33% patients belong to Hindu community. Maximum 66.67% patients had education up to higher secondary. 83.33% were housewives, 63.33% patients belongs to middle class. Maximum 45% patients had constipation. Maximum 66.67% patients had normal psychological status. Maximum 65% were vegetarian. 90% patients were

having sound sleep. Maximum 61.67% patients were of *Vata-kapha Prakriti*. Maximum number of patients i.e. 81.67% was of *Madhyam Samhanana*. Maximum 73.33% of patients were of *Madhyam Satva*. Maximum 93.33% of patients had regular past menstrual cycle and normal appetite. Maximum 56.67% of patients were registered at 32-33 weeks of gestational period. Maximum 92.86% of patients had *Basti Pratyagamana Kaala* of 2 to 4 hours.

## RESULTS

**Table 5: Comparison of mean duration of stages of labor with standard mean duration in 27 patients of Group A.**

Sr. no	Stages of labor	Standard mean duration	Group A mean Duration	S.D.	S.E.	T	p
1.	Stage (I)	13.3 (13hr. 8min)	8.92 (8hrs 54min)	2.77	.533	8.198	<.001
2.	Stage (II)	0.95 (57min)	0.51 (30min 24sec.)	10.43	2.12	2.48	<.001
3.	Stage (III)	0.25 (15 min)	0.07 (4min 20sec.)	1.45	.29	36.79	<.001

**Table 6: Comparison of mean duration of stage of labor with standard mean duration in 27 patients of Group B.**

Sr. No.	Standard labor	Standard mean duration	Group B mean duration	S.D.	S.E.	T	P
1.	Stage (I)	13.3 (13hr. 8min)	7.37 (7hrs 22min)	1.66	.320	18.40	<0.001
2.	Stage (II)	0.95 (57min)	0.43 (25min 44sec.)	8.95	1.72	18.13	<0.001
3.	Stage (III)	0.25 (15 min)	0.06 (3min 25sec.)	.928	.189	61.10	<0.001

**Table 7: Comparative study of results of mean duration of stages in 27 Patients of Group A and 27 Patients of Group B.**

S. No.	Parameters	No. of patients		Mean difference	%age change in duration		% difference	S.E.	t	P
		Gp. A	Gp. B		Gp. A	Gp. B				
1.	Stage I	27	27	1.55	33.1	45.1	12.0	0.622	2.49	<.05
2.	Stage II	27	27	5.03	46.3	54.7	8.4	2.59	1.94	>.05
3.	Stage III	27	27	0.55	72	76	4	0.317	1.75	>.05

**Table 8: Effect of therapy on type of Delivery in 55 Patients of both groups.**

Sr. No.	Type of Delivery	No. of Patients		%age	
		Gp. A	Gp. B	Gp. A	Gp. B
1.	Normal	12	15	44.44	53.57
2.	Episiotomy	14	11	51.85	39.29
3.	Forcep	1	1	3.70	3.57
4.	L.S.C.S.	0	1	0	3.57

**Table 9: Incidence according to pattern of Partograph during labor in group A (27 patients) and group B (28 patients).**

S.No	Partograph	Gp.-I	%age	Gp.- II	%age
1.	Before alert line	26	96.29	26	92.85
2.	Between alert & action line	01	3.70	01	3.57
3.	On or after action line	0	0	1	3.57

**Table 10: Incidence according to pattern of FHR during labor in Group A (27 patients) and Group B (28 patients).**

S. No.	FHR/ min	Gp.- I	%age	Gp. -II	%age
1.	<110	0	0	1	3.57
2.	110- 160	26	96.29	26	92.85
3.	>160	1	3.70	1	3.57

**Table 11: Effect of therapy on intensity of pain during labor in both groups.**

Intensity	Ist stage				IInd Stage			
	Gp. A		Gp. B		Gp. A		Gp. B	
	No. of patients	% age						
Mild	6	22.22	4	14.81	1	3.70	1	3.70
Moderate	21	77.77	23	85.18	26	96.27	25	92.259
Severe	0	0	0	0	0	0	1	3.70

**Table 12: Overall Result of therapy in patients of both the groups.**

Sr. no.	Result	Effect of therapy	Group A		Group B	
			No. of patients	%age	No. of patients	%age
1.	Grade-I	Marked	12	44.44	15	53.57
2.	Grade-II	Moderate	13	48.15	11	39.29
3.	Grade-III	Mild	2	7.41	1	3.57
4.	Grade-IV	No	0	0	1	3.57

In Group A 44.44% patients and in Group B 53.57% patients showed marked effect of therapy and 48.15% patients in Group A and 39.29 % patients in Group B showed moderate effect of therapy. Followed by 7.41% in Group A and 3.57% in Group B with mild effect of therapy. Only 3.57% patient in Group B showed no effect of therapy.

## DISCUSSION

The present clinical trial was done on 60 patients and completed by 55 patients, 27 in Group A and 28 in Group B. The medicine used for the trial for *anuvāsana basti* and *pichu* is *Balyam 1* in Group A and *Balyam 2* in Group B. Both the trial drug was prepared by the *tilla taila* medicated with the *dravyas* of *madhur gana* but the *kawath drvyas* were different for both the trial drugs.

Both the *taila Balyam tail 1* and *Balyam tail 2* 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 both trial drugs that all the patients had spontaneous nature of labour, maximum with normal and episiotomy mode of delivery and it highly reduces the standard mean duration of all the three stages of labour which helps in reducing the pain and discomfort during delivery.

At normal term pregnancy birth is accomplished by a coordinated ripening and dilatation of cervix, accompanied by uterine contractions and descent of presenting part. Cervical ripening is the result of realignment of collagen, degradation of collagen cross linking due to proteolytic enzymes.

*Tila taila* a principle constituent of *Balyam taila 1* and *Balyama taila 2* has high percentage of polyunsaturated fatty acid (omega- 6 fatty acid). Prostaglandins induce pain signals, regulation of inflammation and maintenance of tissue. Also role of fatty acid in cervical ripening and parturition has been established. Further local application of *Balyam tail 1* and *Balyam tail 2* in form of *yonipichu* restores moisture of genital tract. The other constituents of *Balyam taila 1* and *2* increased secretion of lysozymes & granular enzymes which enhance the collagenolytic activity which results in cervical ripening.<sup>[13]</sup> On the other hand *Anuvāsana* and *matrabasti* have got a property to regulate sympathetic activity by regulating adrenaline and noradrenaline secretions and helps in the balance of A.N.S.<sup>[14]</sup> Thus use of *basti* may also affect the A.N.S. governing myometrium & thus helps in regulating their function during labor.<sup>[15]</sup> The ferguson reflex is an example of positive feedback and the female body's response to pressure application in the cervix or vaginal walls. Upon 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.<sup>[16]</sup> As *yonipichu* exert the mild and continuous stretching pressure on the cervix and vaginal wall there may be possibility that this pressure may cause the ferguson reflex in the mild form and hence help in cervical ripening.

## CONCLUSION

Present comparative clinical study was designed to find out the better drug among the *Balyam taila 1* and *Balyam*

tail 2. Comparative study of results in both the groups showed that the therapy given in Group B shortened the duration of 1<sup>st</sup> stage significantly as compared to Group A. Hence *BalyamTaila 2* shows better results in concern of 1<sup>st</sup> stage and shows insignificant results in 2<sup>nd</sup> and 3<sup>rd</sup> stage of labor.

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