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Clinical Study on the Efficacy of *Potaki* (*Basella Alba*) *Pichu* for *Sukha Prasava*

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ABSTRACT

Ayurveda, the science of life has abundant knowledge to give to the mankind so that they lead a healthy life as designed by nature. But, as time goes on there was a deviation from nature. Among various lifestyle disorders, women delivering by caesarean section can also be considered one of it. Ayurveda has described many things for the sake of natural vaginal delivery. Most of the plants claimed to be oxytocics are used to induce and maintain labour, aid the removal of retained placenta, regulate post partum bleeding and so on. The plant extracts increase the spontaneous activity of uterus causing increase in contraction. According to ayurveda, the whole process of prasava is completely based on prasuti maruta or apana vayu. It has got precise role in stimulation, regulation of myometrial contraction and expulsion of fetus in normal labour. Potaki have madhura rasa, snigdha guna, madhura vipaka and vata pitta nashak action. Due to these properties potaki pacifies vitiated apana vayu, and helps in easy and smooth delivery. Thus in the present study, potaki taila application in vagina in the form of pichu has been done to facilitate easy and smooth delivery.

KEYWORDS

Ayurveda, Sukha Prasav, Normal Labour, Apana Vayu

Greentree Group

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INTRODUCTION

Motherhood is a crowning act in a woman's life. Nothing is more beautiful than a pregnant woman, and nothing is more awe inspiring than a woman giving birth. Every woman seeks to enter this new world of motherhood with minimal pain, agony and operative aids. Thus effort should be there to ease the natural process of birth and provide minimum level of stress.

Normal labour is the process by which the complete products of conception are expelled out through the birth canal. There are various factors which hampers this normal process. Normal labour is having 3 stages. The first stage begins with onset of labour and ends with full dilatation of cervix. The total duration of first stage is 10 – 12 hours in primigravidae and 6-8 hours in multigravidae[1].

Spontaneous vaginal delivery is the expected outcome for most pregnancies. Assisted vaginal delivery may occur when the second stage of labour is prolonged or when the baby appears to be in distress and delivery time needs to go faster.

Even thousands of years ago, ayurveda has given importance for safe motherhood. The holistic approach of medicines also described different kinds of herbal preparation for sukha prasava. Many herbs used in ayurvedic preparation are available at doorstep and often used as food. In ayurvedic texts, role of vata especially apana vayu is considered in stimulation and regulation of normal labour. Abnormalities in either of these may result in dystochia or abnormal labour.

Potaki has madhura rasa, snigdha guna, madhura vipaka and vata pitta nashak action. Due to these properties potaki pacifies vitiated apana vayu and helps in easy and smooth delivery[2] . Bhavaprakash has also mentioned that application of potakimoola kalka with tila taila inside vagina facilitates smooth delivery[3].

This study is a preliminary effort in the direction to evaluate the efficacy of vaginal application of potaki(*Basella Alba*) taila pichu for sukha prasava(easy labour).

AIM AND OBJECTIVE

1) To provide a safe and effective management of labour or easy labour

2) To study the mechanism and process of normal labour in the light of both ayurvedic and modern perspective.

3) To evaluate the role of vaginal application of potaki taila and its effect on cervical dilatation and effacement, upto the delivery.

MATERIALS AND METHODS

Selection of cases: After fully satisfying the diagnostic criteria of "PRASAV" the names of patients were registered for the study. A total numbers of 60 patients registered randomly from the OPD and IPD of Govt. Ayurvedic College and Hospital, Guwahati - 14, Assam. Detailed history has been taken according to the proforma prepared for the study incorporating all the relevant points from both ayurvedic and modern views.

Ethical Committee Approval No. IEC/15/20-85 Dated: 07/05/15

Laboratory investigation

1) Blood routine test includes- ABO Rh, Haemoglobin, total count, differential leucocyte count, bleeding time, clotting time, blood sugar, serum creatinine, blood urea

2) Special investigation – VDRL, HIV, HBsAG, TSH, LATELET COUNT

3) USG (at least 3 times during whole pregnancy)

4) ECG

5) Other investigation like Glucose tolerance test, urine for albumin, liver function test, kidney function test etc if required

Inclusion criteria

1) Pelvis must be adequate

Ischial spine not prominent, sacrosciatic nothes should be sufficiently wide, pubic arch should accommodate the palmer aspect of the two fingers, pubic angle fully corresponds to the fully abducted thumb and index finger, transverse diameter of the outlet should allow knuckles of the clinched fist between the ischial tuberosity.

2) Patients must come under true labour pain and at term

3) Psychosomatic condition of mother should be healthy

4) Baby must remain in cephalic presentation

5) Membrane must remain intact

Exclusion Criteria

1) Age below 18 years and above 40 years.

2) Patients with previous LSCS

3) Patients with bad obstetrics history

4) Patients with CPD

5) Patients with central placenta previa or abruptio placenta

6) Any vaginal obstruction

7) Malpresentation of fetus

8) Mother suffering from hypertensive disorder

9) Non reassuring FHR (FETAL DISTRESS)

10) Mother with any medical disorder

Parameters for Assessment of Results

1. By assessing the cervical dilation and effacement 1st hour before pichu insertion then 4th and 8th hour after removal of pichu.

2. By noting the time taken in latent phase of first stage of labour, active phase of first stage of labour , 2nd stage and 3rd stage of labour and total duration of labour .

3. By observing partograph recordings.

Mode of administration: Under aseptic condition one sterial pichu is soaked in taila and kept inside vagina for duration of 2 hours. The pichu was inserted as the patient enters latent phase of 1st stage of labour (cervical dilatation about 1- 1.5 cm dilatation). Then per vaginal examination was done to examine cervical dilatation, effacement, uterine contraction, membranes and station. If cervical dilatation has not reached 3cm dilatatio , again another pichu was inserted for another 2 hours. Same procedure continued (maximum 3 times)upto starting of active phase of labour. After that normal progress was observed till delivery without active management.

Observations were recorded and effects of drugs were analysed.

Assesment of results:

Assessment of results were done under three main headings and records are taken before treatment (before application of pichu) and three records every hourly after treatment (after removal of pichu).

1. General examination

Blood pressure

Pulse

Temperature

2. Per abdomen findings

Fundal height (in cm)

Contraction:(in 10 minutes)

Duration interval

Fetal heart rate

3. Per vaginal findings

Dilatation (in cm)

Effacement (in %)

Consistency of cervix

Position of cervix

Station

Others (stained liquor/show/blood etc)

RESULTS

UTERINE CONTRACTION

TABLE 1 duration of uterine contraction in 1st, 4th and 8th hour during labour.

Table 1 Duration of uterine contraction in 1st, 4th and 8th hour during labour

Group	**Duration of uterine contraction (mean ± SD)**		
	1ST HOUR	4TH HOUR	8TH HOUR
Trial group	30.93 ± 3.34	32.00 ± 3.62	32.00 ± 3.62
Control group	30.68 ± 3.20	31.6 ± 3.51	31.6 ± 3.51
Comparison between the groups Unpaired 't' test	t =0.290 p > 0.05 NS	t = 0.43 p > 0.05 NS	t = 0.43 p < 0.05 NS

DISCUSSION

Mean age groups was 23- 27 years in total cases, 53.33% were multiparae and 46.66

were primigravidae. Majority of women (80%) were non working and 20 % were working and out of total patients 81.66 of the women were from middle class status.

In obstetrical examination, fundal heights, foetal lie, presentation and uterine contraction were observed and noted. Fetus was found in longitudinal lie and cephalic presentation in all of the women. Fundal heights of 40 weeks were found in 61.66%. Duration of uterine contraction was 25- 30 seconds in 85% of women.

Table 2 Interval of uterine contraction in 1st, 4th and 8th hour during labour.

Group	**Interval of uterine contraction (mean ± SD)**		
	1ST HOUR	4TH HOUR	8TH HOUR
Trial group	7.66 ± 2.25	7.33 ± 2.29	4.45 ± 1.34
Control group	6.63 ± 2.35	6.36 ± 2.41	5.2 ± 1.31
Comparison between the groups Unpaired 't' test	t = 1.63 p > 0.05 NS	t = 1.59 p > 0.05 NS	t = 2.19 p < 0.05* S

During p/v examination adequate pelvis was noted in all of the women. There was no significant difference in the demographic profile of both trial and control group. Potaki taila usage produces no change in duration of uterine contraction but reduces the mean interval of uterine contraction at 8th hour in trial group as compared to the control group as shown in table no.1 and 2.

Mean Cervical dilatation increased at higher value in trial group compared to control at 4th hour, while mean cervical effacement also increased both at 4th and 8th hour but increased in more higher value at 8th hour as shown in table no. 4 and 5. Position of cervix of maximum cases was changed at 4th hour and 8th hour in trial group as compared to control group as in table no.3; it may be due to increase progress of cervical dilatation in trial group.

Table 3 Position of the Cervix at 1st, 4th and 8th hour during labour

Group	Position of Cervix (% and Mean ± SD)											
	1st hour				4th hour				8th hour			
	Post.	middle	Ant.	Mean sd	Post.	middle	Ant.	Mean sd	Post	middle	Ant.	Mean sd
Trial group	16 (53.5%)	9 (30 %)	5 (16.7 %)	0.63 ± 0.7	0 (0 %)	7 (23.3 %)	23 (76.7 %)	1.7 ±0.64	0 (0 %)	1 (3.33 %)	29 (96.7 %)	1.93 ± 0.36
Control group	13 (43.3 %)	13 (43.3%)	4 (13.3%)	0.64± 0.7	4 (13.3 %)	16 (53.3%)	10 (33.3%)	1.2 ± 0.66	2 (6.71%)	7 (23.3 %)	21 (70 %)	1.6 ± 0.60
Comparison between the groups Unpaired 't' test	t = 0.40 p >0.05 NS				t = 2.97 p< 0.01* S				t =2.58 p< 0.02* S			

Table 4 Cervical Dilatation

Group	Cervical dilatation (mean ± SD)		
	1ST HOUR	4TH HOUR	8TH HOUR
Trial group	1.47±0.47	3.07±0.37	5.95±0.92
Control group	1.54±0.53	1.77±0.32	2.6±0.48
Comparison between the groups Unpaired 't' test	t = 1.54 p > 0.05 NS	t = 14.55 p < 0.001** HS	t = 17.68 p < 0.001** HS

Table 5 Cervical Effacement

Group	Cervical dilatation (mean ± SD)		
	1ST HOUR	4TH HOUR	8TH HOUR
Trial group	28.00± 6.10	48.00 ± 6.89	69.00 ± 6.35
Control group	26.5 ± 6.03	42.00 ± 7.26	54.00 ± 9.23
Comparison between the groups Unpaired 't' test	t = 0.957 p > 0.05 NS	t = 3.28 p < 0.05* S	t = 7.33 p < 0.001** HS

Duration of latent phase is reduced in trial group than control while active phase remain almost same in both the groups. The first stage also reduced in trial group compared to control group, but second and third stage remain same. Total duration of labour is reduced significantly in trial group as compared to control group as shown above in table no.6. At last it can be interpreted that as we keep the potaki taila pichu in latent phase of labour its acted more on that particular period only because of which first stage duration reduced and as a result total stage of labour also reduced. Potaki taila effect is more seen in dilating the cervix compared to effacement. And also observed in table no.7 that primigravidae it affected more than multiparae.

Table 6 Duration of Labour

Variable	Trial group Mean ± SD	Control group Mean ± SD	t	p
Duration of latent phase(hours)	5.45 ± 0.92	7.95 ± 1.05	t =9.80	P< 0.05* S
Duration of active phase(hours)	6.6 ± 0.93	6.7 ± 1.02	t = 0.693	p>0.05 NS
Duration of first stage(hours)	12.05 + 1.44	14.65 + 0.88	t = 8.4	P<0.001**HS
Duration of second stage(minutes)	48.5 ± 12.2	46.5 ± 8.21	t = 0.744	p> 0.05 NS
Duration of third stage(minutes)	4.15 ± 1.22	4.16 ±1.00	t = 0.034	p> 0.05 NS
Total duration of labour(hours)	12.9 ± 1.63	15.6 ± 0.90	t =7.94	P<0.001** HS

Probable Mode of Action of Potaki Taila

Potaki taila has madhura rasa, snigdha guna, madhura vipak and vata pitta nashak action. Due to these properties potaki pacifies vitiated apana vayu, thus helps in easy and smooth delivery. Bhavaprakash has also mentioned that application of potakimula kalka with tila taila inside vagina facililates

smooth delivery. According to ayurvedic literature, improper functioning of apana vayu is responsible for garbha sanga. The vitiated vayu after obstructing the vaginal orifice moves inward and obstructs the aperture of asaya causing cervical spasm, resulting in cervical dystochia. The whole process of prasav is completely based on prasuti maruta or apana vayu. It has got precise role in stimulation, regulation of myometrial contraction and expulsion of fetus in normal labour. Thus, by maintaining normal functions of apana vayu, potaki facilitates cervical softening and dilates and increase uterine contraction. Tila taila acts as snehan and make the consistency of cervix soft. By virtue of these qualities, drug medicated taila can be used.

Table 7 Comparison among Primigravidae and Multiparae for Effct of *Potaki Taila* (in dilatation and effacement) in Trial Group

GROUPS	DILATATION(mean ± sd)	EFFACEMENT(mean ± sd)
PRIMIGRAVIDAE (N=16)	6.625 ± 0.763	75.0 ± 5.16
MULTIPARAE (N=14)	5.28 ± 0.578	69.28 ± 6.46
Comparison between the groups Unpaired 't' test	t = 4.41 p<0.001** HS	t = 2.69 p<0.01* S

CONCLUSION

From a functional aspect, the only essential features of labour are cervical dilatation and effacement. Nowadays, there are increased incidences of caesarean sections. There are many factors leading to deviation from normal spontaneous vaginal delivery.

According to Ayurveda vitiation of apana vayu is responsible for producing various labour disorders. Potaki oil helps in pacifying apana vayu and increasing uterine contraction along with cervical dilatation and effacement. Thus, facilitate easy and smooth delivery.

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