

## A PILOT STUDY TO EXPLORE DIFFERENT MODES OF SVEDANA DURING NASYAKARMA

LIFAM ROSHANARA<sup>1</sup>, PRAVEEN B S<sup>2</sup>, VIKRAM KUMAR<sup>3</sup>

Department of Panchakarma,<sup>1,2,3</sup> Alva's Ayurveda Medical College,  
Moodabidire- 574227, Karnataka (India)

Pre-Print Online First : Dec 31, 2020

**Abstract: Introduction :** *Nasyakarma* is a prime modality of treatment for treating various diseases especially related to head and neck. *Svedana* is mandatory preoperative procedure prior *Nasyakarma*. *Patasveda* and *Nadi Sveda* are usually considered for the same. In present study an attempt is made to explore various varieties other than which are in practice to find better alternate. Hence, *Nivata Shayana* (Air tight chamber), *Gurupravarana* (covering with thick cloth), *Nadi Sveda* with variations in methodologies are used to ascertain the best.

**Materials and Methods:** 10 healthy subjects were subjected to 9 different mode of *Svedana* on different occasions. *Abhyanga* was done on face and head with *Tila Taila* for 5 minutes as a preoperative procedure to *Svedana*. Subjects were assessed on regular intervals for proper or improper symptom of *Svedana*.

**Results :** Mean time taken for *Sveda pravrutti* were 54.14, 29.57, 9.10, 2.33, 2.18, 11.37, 4.22, 2.20 and 2.41 in *Nivata* room, *Gurupravarana*, *Nadisveda* covering with *Gurupravarana*, *Nadi Sveda* covering with cotton cloth, *Nadisveda* covering with Polyester cloth, *Abhyanga* followed by *Gurupravarana*, *Abhyanga* followed by *Nadi Sveda* covering with *Gurupravarana*, *Abhyanga* followed by *Nadi Sveda* covering with Polyester and *Abhyanga* followed by *Nadi Sveda* covering with respectively.

**Conclusion:** *Nadi Sveda* performed by covering head with polyester cloth was considered as best as attainment of *Samyak Svinna Lakshana* was earlier when compared with others. Moreover, no complications were observed. Hence, this variety can be practiced as an alternate to existing methods for practical convenience.

**Keywords:** *Purvakarma, Nasya Karma, Gurupravarana, Nadi Sveda, Nivata, Svedana*

### INTRODUCTION:

*Nasya Karma* is considered as prime modality of treatment for managing disorders of head and neck. It is classified into various subtypes based on either mode of administration, dosage or purpose. Based on purpose it is classified as *Shodhana, Shamana and Brimhana* varieties.[1] *Marsha* and *Pratimarsha* are varieties based on administered dose of drug.[2] *Marsha Nasya* advocated methodically with preoperative, operative and postoperative procedures. *Snehana* and *Svedana* are considered mandatory *Purvakarma* prior *Nasyakarma*. Preoperative procedures are mandatory to bring the morbid *Dosha* to the nostrils from where they will be expelled.

*Shiras* being one among *Trimarma*, is contraindicated area for *Svedana*. Hence *Mridu Sveda* is advocated in general.<sup>3</sup> *Pani Tapa Sveda* (Sudation therapy is given by placing rubbed hands over desired area) has been recommended by various Ayurveda classics prior to the *Nasya Karma*.<sup>4</sup> Practical implementation of *Pani Tapa Sveda* till appearance of Sweating is time consuming. Hence, currently various other varieties of *Svedana* Viz. *Pata Sveda* (Sudation with cloth) and *Nadi Sveda* (Sudation with steam passed through tubular structure) are in practice considering the convenience.<sup>5</sup> In both the modes of *Svedana*, assessing *Samyak Svinna Lakshana* is difficult as, moisture do come in contact with the skin surface during the procedure. This is the hindrance in assessing *Samyak Lakshana*. Moreover, the subjective feeling of patient alone cannot be relied upon. Even, *Nadi Sveda* is considered as *Madhyama* variety of *Svedana* which require utmost care when applied over head.<sup>6</sup>

*Niragni sveda* are set of *Svedana* which are applied without using fire either for preparation or procedure. *Ushna Sadana* and *Guru Pravarana* are varieties of *Niragni Sveda* may be

1. Postgraduate Scholar Department of Panchakarma Alvas Ayurveda Medical College, Vidyagiri, Moodbidri-574227 Karnataka.  
2. Professor and Head Department of Panchakarma Alvas Ayurveda Medical College Moodabidire- 574227 Karnataka.  
3. Associate Professor Department of Panchakarma Alvas Ayurveda Medical College Moodabidire- 574227 Karnataka.

implemented as a choice due to their mild intensity.<sup>7</sup> Moreover, assessing the *Samyak Svinna Lakshana* becomes easier. Indifferent wind velocity retain warm ambient temperature there by producing sweat in these varieties of *Svedana*.<sup>8</sup>

*Nadi Sveda* also may be planned obliterating the practical difficulty of issues related to assessing *SamyakSvinnaLakshana*. Classics recommend, *Nadi Sveda* after covering *Gurupravarna* with *Rallaka* (woollen cloth) to reduce the intensity of *Nadi Sveda* and produce effective sweating.<sup>9,10</sup> Wool being a non conductor of heat, produce sweat retaining heat. This methodology is also possible using other varieties of fabric such as polyester and cotton which may produce faster sweating effect due to the thin texture. Both natural (wool and cotton) and artificial (polyester) are used for *Gurupravarana* to ascertain the better.<sup>11</sup>

Hence, various methods of *Svedana* viz *Nivata* room, *Gurupravarana*, *Nadi Sveda* covering with *Gurupravarana*, *Nadi Sveda* covering with cotton cloth, *Nadi Sveda* covering with Polyester cloth, *Abhyanga* followed by *Gurupravarana*, *Abhyanga* followed by *Nadi Sveda* covering with *Gurupravarana*, *Abhyanga* followed by *Nadi Sveda* covering with Polyester and *Abhyanga* followed by *Nadi Sveda* covering with cotton respectively are planned to ascertain the best.

## MATERIALS AND METHODS

### SOURCE OF DATA -Sample Source

10 healthy volunteers from the Alva's Ayurveda Medical College Hospital, Moodabidri. Each volunteer was subjected to 9 different mode of *Svedana* on consecutive 9 days.

### METHOD OF COLLECTION OF DATA

**Study Design:** Interventional study.

**Sample Size:** 10 healthy volunteers fulfilling the inclusion criteria of *Nasya Karma* has been selected for study and assigned into 9 groups for consecutive 9 days of *Svedana*.

**Inclusion Criteria:** Patients fit for *Nasya Karma*.

**Exclusion Criteria:** Patients unfit for *Nasya Karma*.

Materials: Woolen cloth , Polyester cloth and Cotton cloth - each measuring 2 meter, Aluminium cap : (radius-21 cm, circumference-120 cm), Tila Taila - 20 ml for each participant per sitting, *Nadi Sveda Yantra*, Infrared thermometer, BP apparatus.



BP Appratus



Nadisveda



Tila Taila



Aluminum



Woolen cloth



Polyester cloth



Cotton cloth



Infra red thermometer

### Grouping and Intervention:

#### Group I :

- Nivata room* : Subject was made to sit comfortably in a room devoid breeze.



- Patient was observed for *Samyak Svinna Lakshana*.

Group

#### Group II :

- Subject was made to sit comfortably on a chair.
- Aluminium cap was placed on head and woollen cloth is wrapped around head and face.
- Patient was observed for *Samyak Svinna Lakshana*.



Group

#### Group III :

- Subject was made to sit comfortably on a chair.
- Aluminium cap was placed on head.

- Nadi Sveda* was given covering head and face with woollen cloth.
- Patient was observed for *Samyak Svinna Lakshana*.



Group III

**Group IV :**

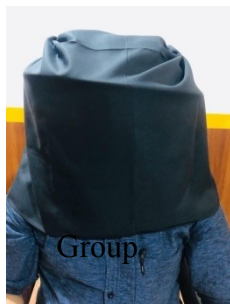
- Subject was made to sit comfortably on a chair.
- Aluminium cap was placed on the head.
- Nadi Sveda* was given covering face and head with cotton cloth.
- Patient was observed for *Samyak Svinna Lakshana*.



Group IV

**Group V :**

- Subject was made to sit comfortably on a chair.
- Aluminium cap was placed on the head.
- Nadi Sveda* was given covering face and head with polyester cloth.
- Patient was observed for *Samyak Svinna Lakshana*.



Group

### Group VI :

- Subject was made to sit comfortably on a chair.
- Aluminium cap was placed on the head.
- Abhyanga* done with *Tila Taila* on head and face.
- Head and face wrapped with woollen cloth.
- Patient was observed for *Samyak Svinna Lakshana*



Group VI

### Group VII :

- Subject was made to sit comfortably on a chair.
- Aluminium cap was placed on the head.
- Abhyanga* done with *Tila Taila* on head and face
- Nadi Sveda* was performed covering head and face with woollen cloth.
- Patient was observed for *Samyak Svinna Lakshana*



### Group VIII :

- Subject was made to sit comfortably on a chair.
- Aluminium cap was placed.
- Abhyanga* done with *Tila Taila* on head and face
- Nadi Sveda* was performed after covering face and head with polyester cloth.
- Patient was observed for *Samyak Svinna Lakshana*

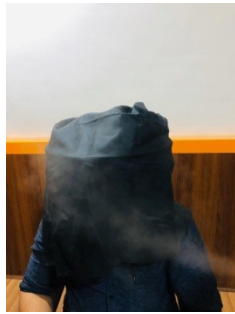


*Lalata Sveda*

Group VIII

### Group IX :

- Subject was made to sit comfortably on a chair.
- Abhyanga* done with *Tila Taila* on head and face.
- Aluminium cap was placed on head.
- Nadi Sveda* was performed after covering head and face with cotton cloth.
- Patient was observed for *Samyak Svinna Lakshana*



Group IX

## ASSESSMENT CRITERIA

*Prakruti* assessment was done before treatment using tool developed by Kishor Patwardhan and Rasmi Sharma.<sup>12</sup> Subjects were assessed every 5 minutes during procedure till the appearance of *Lalata Sveda*.

## SUBJECTIVE PARAMETERS:

I feel tired  
I feel irritable  
I feel thirsty  
I feel dizzy  
My mouth is dry  
My lips are dry  
I feel like drinking water  
I have headache  
My swollen lips.<sup>13</sup>

## OBJECTIVE PARAMETERS:

Time of appearance of sweat on forehead, Temperature, BP, pulse rate, respiratory rate. Assessment was done on detailed case pro-forma adopting standard scoring methods of subjective and objective parameters.

## OBSERVATION AND RESULT:

In this study, average age group of subjects was 29 years. Majority of subjects were female and those who possess *Pittakapha prakruti*. Respiratory rate was increased in group VI and group II during the study. Whereas, no changes on respiratory rate was observed in group IV and IX during the study. (Fig-1). Rise in temperature was seen in Group II and decrease in temperature after treatment was observed in group III (Fig-2). Maximum increase in Pulse rate was observed in group IV. Maximum decrease in Pulse rate was observed in group III (Fig-3). Maximum increase in Systolic BP was recorded in group IV and maximum decrease was recorded in group I (Fig-4). Maximum increase in diastolic blood pressure was recorded in group III. Whereas, maximum decrease in diastolic blood pressure was recorded in Group II (Fig-5). All the variations of the vitals are depicted in Table-1. Symptoms of dehydrations like dryness of lips, thirst and dryness of the mouth was observed in group VII( *Abhyanga* with *Nadi Sveda* after covering the head with wool cloth) (Table-2). *NadiSveda* performed by covering the head with polyester cloth yielded earlier *SvedaPradurbhava*(2.18 minutes). Whereas, Staying in *Nivata* room produced sweating effect very late (57.14 minutes) (Table-3).

**Table 1:** Average change in vitals of all subjects

Group	I		II		III		IV		V		VI		VII		VIII		IX	
	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
<b>RR (bpm)</b>	18.2	19.9	20.6	22.3	19.3	20.5	20.5	20.6	19.7	20.3	21.1	23.1	18.9	19.6	19.7	20	20.7	20.2
<b>Temperature (oC)</b>	35.7	36.2	32.9	36.3	36.3	35.7	35.7	35.8	35.9	36	36.2	36.2	35.9	36.1	36.3	36.2	36	36.2
<b>PR (bpm)</b>	76.6	76.1	74.3	74.3	78	74.4	77.8	79.7	78.8	75.4	81	79.4	74.3	76.9	77.8	77.6	79.6	79.7
<b>Systolic BP (mm of Hg)</b>	110.8	103.6	105.8	101.8	109.8	106.4	102.2	105.6	107.6	104	104.4	103.8	99.4	98.8	104.8	106	102	104.2
<b>Diastolic BP (mm of Hg)</b>	70.6	69.4	69	65.7	67.9	73.6	72	73.8	73.2	68.7	65.8	69.3	69.9	69.8	70	70.3	68.6	70.8

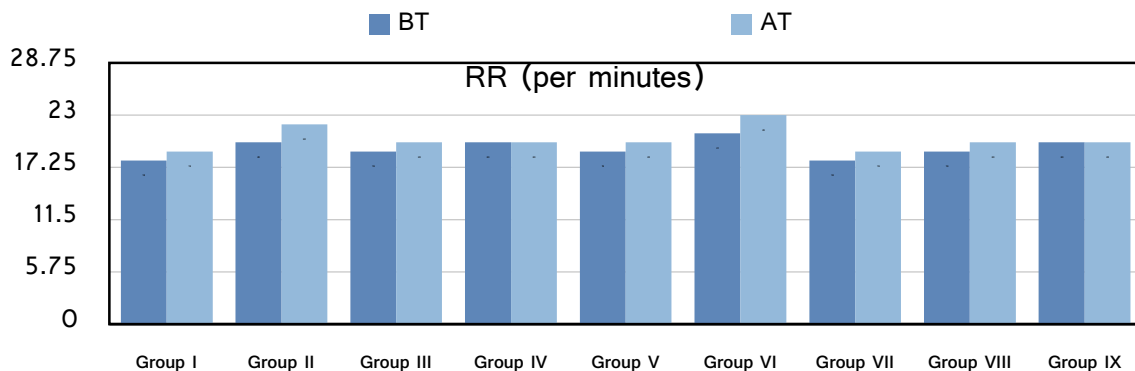
**Table 2 :** Symptoms of dehydration / *Atisvinna lakshana*

Symptoms	Group	Grading	Number of participants
My lips are dry	Group VII	1	1
I feel like drinking water	Group VII	2	2
My mouth is dry	Group VII	1	1

**Table 3:** Average time taken for *Svedappravruti*

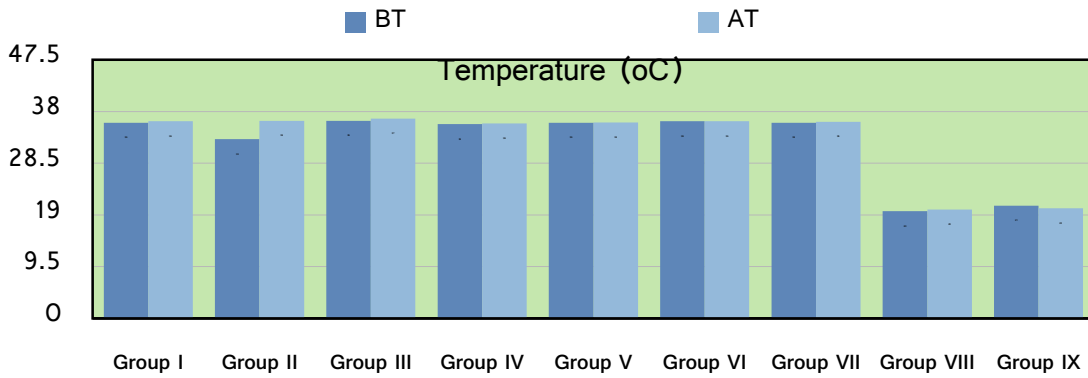
Group	Type of Sveda	Average
I	<i>Nivata</i> room	54.14
II	<i>Gurupravarana</i>	29.57
III	<i>Nadisveda</i> covering with <i>Gurupravarana</i>	9.10
IV	<i>Nadisveda</i> covering with cotton cloth	2.33
V	<i>Nadisveda</i> covering with Polyester cloth	2.18
VI	<i>Abhyanga</i> followed by <i>Gurupravarana</i>	11.37
VII	<i>Abhyanga</i> followed by <i>Nadisveda</i> covering with <i>Gurupravarana</i>	4.22
VIII	<i>Abhyanga</i> and <i>Nadisveda</i> covering with Polyester cloth	2.20
IX	<i>Abhyanga</i> and <i>Nadisveda</i> covering with cotton cloth	2.41

\* Average time taken for *SvedaPravruti*

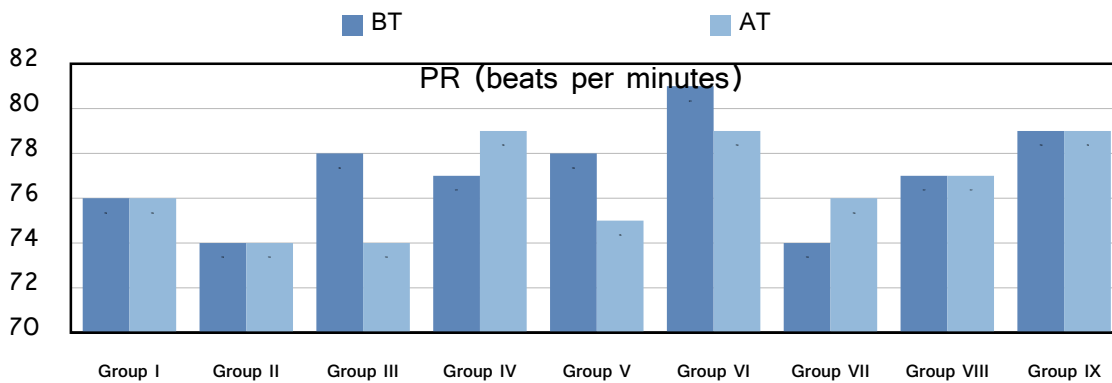
**Figure 1 :** showing average changes in Respiratory rate



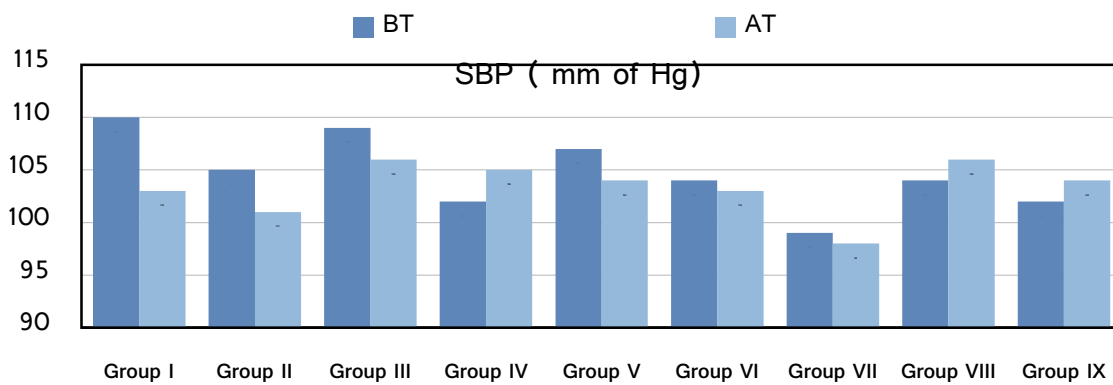
**Figure 2 : Showing averagechanges in Temperature**



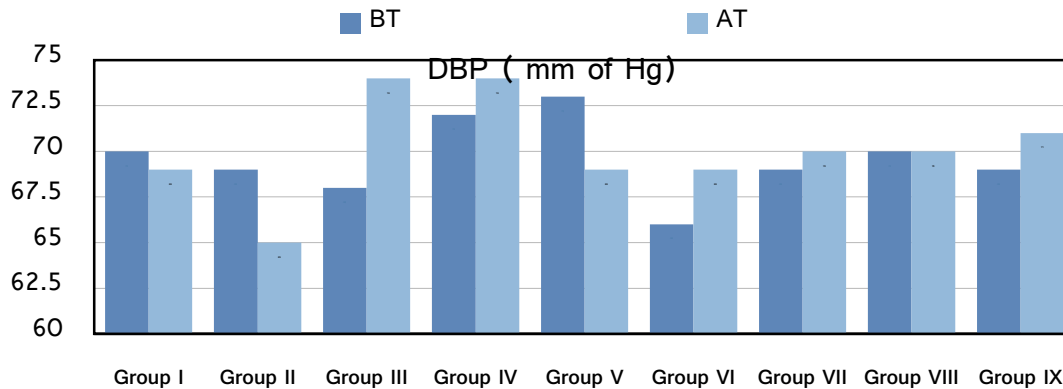
**Figure 3 Showing average changes in pulse rate**



**Figure 4 : Showing averagechanges in systolic blood pressure**



**Figure 5 : Showing average changes in diastolic blood pressure**



## DISCUSSION

*Svedana* is considered as one of the important preoperative procedure of *NasyaKarma*. *Ayurveda* literature emphasizes on its use both as preoperative and repeated administration during the procedure of *Nasya* too.[14,15] Substandard preoperative procedures likely produce complications. Hence, planning and execution of them play a pivotal role in yielding fruitful outcome. *Svedana* like *PataSveda* and *NadiSveda* having various shortcomings, make them not an ideal choice though popularly used. Hence, with the quest for the effective alternate, various modes of *Svedana* were tried.

Physiological process of sweating is influenced by various internal and external factors. Raise in temperature either inside or exterior more than the body, produces sweat.<sup>16</sup> The vitals of the body also tend to change during the interventions.<sup>17</sup> Hence, various vitals were recorded before during and after the study. Moreover, life threatening complications due to extreme variation in vitals need to be recorded for assessing the safety.<sup>18</sup> Maximum increase in average respiration was observed in subjects with *Nivata* room. Decreased air flow might have induced rapid and shallow breath with relatively increased rate of respiration.<sup>19</sup> Maximum increase in average temperature was recorded in group where *Gurupravarana* with wool was performed. Wool cloth being a bad conductor of heat might have retained increased skin temperature. Increase in diastolic blood pressure, decrease in the pulse rate and Systolic blood pressure was observed after covering with *Gurupravarana*. Sympathetic response on covering thick cloth might have contributed in this change.<sup>20</sup>

During stay in *Nivata* room, only 2 persons sweated in 60 minutes with average time taken for sweating was 54 minutes, 47 second. Even in individuals with *Pittaprakruti*, sweating effect was observed late. *Gurupravarana* with woollen cloth yielded *Svedapradurbhava* on an average of 29 minutes and 57 seconds. Though wool is thermal insulator keep body warm, it has produced

sweating late. On the contrary, similar procedure after performing massage produced *Svedapravrutti* early. Thermal retention after massage might be the reason for such variation. *Nadisveda* performed after covering with woollen cloth produced sweat in 9 minutes, 10 seconds on an average. Whereas, similar procedure after *Abhyanga*, produced sweating on an average of 4 minutes, 22 seconds. Retained heat after *Abhyanga* and continuous and uniform heat of *Nadisveda* might have been responsible for early sweating.

*Nadi Sveda* was performed after covering cotton and polyester cloth, mean time taken for appearance of sweat were 2 minutes, 33 seconds and 2 minutes, 18 seconds respectively. When both the procedure were performed after *Abhyanga*, time taken for *Svedapradurbhava* was increased to 2 minutes, 41 seconds and 2 minutes and 20 seconds respectively. Wool is dense continuum fabric has taken more time than cotton and polyester. Cotton porous material helped in *Svedapravrutti* earlier than wool but due to air trapped in the pores and wicking property might have slightly delayed the *Svedapravrutti*. Polyester being hydrophobic, thin continuum filament has produced earlier *Samyak Svinna Lakshana* than all material with ease. Hydrophobic property prevent moisture entry. Hence, confirms the actual *Lalata Sveda*. Polyester being anti microbial fibre might even help combating contamination of cloth after repeated usage.<sup>21,22</sup>

## CONCLUSION

Among easily available both natural and artificial cloth, polyester produced early *Samyak Svinna Lakshana* without any complication. Wool cloth *Gurupravarana* has produced earlier sweating effect in comparison with other natural and artificial cloths. Hence, *Woollen* cloth being a better insulator of heat may be used for *Gurupravarana* as *Niragni Sveda* as explained in classics. Hence *Nadi Sveda* performed by covering the head with Polyester cloth can be practiced as an alternate to existing methods.

## Conflicts of interest:

Nil

## Acknowledgement:

The authors thank volunteers helped in this study

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**Corresponding Author:** Dr. Lifam Roshanara, Department of Panchakarma, Alva's Ayurveda Medical College, Moodabidire- 574227, Karnataka (India) Email: [lifamr2@gmail.com](mailto:lifamr2@gmail.com); Mobile: 91 8151835408