

## **A CLINICAL STUDY ON GREEVA BASTI IN GREEVA HUNDANAM (CERVICAL SPONDYLOSIS) WITH TILA TAILA**

**Sreejith.J.R<sup>1</sup>, VikramKumar<sup>2</sup>**

<sup>1</sup> Final year P.G Scholar, <sup>2</sup>Associate Professor, Department of P.G studies in Panchakarma, Alva's Ayurveda Medical College and Hospital, Moodabidri, D.K District, Karnataka, India

**DOI:** <https://doi.org/10.47071/pijar.2020.v05i04.006>

### **ABSTRACT**

The word *Upakrama* in terms of ayurvedic classics refers planning a line of treatment and executing it to a perfection for a betterment of the diseased. *Sadvidha upakrama* forms the basic core of treatment. It consists of six therapies i.e. *Langana, Brimhana, Rukshana, Snehana, Swedana* and *Stambhana*. Among these *Snehana* and *Swedana* plays a major role in the management of disorders caused due to vitiation of *Vata*. *Greeva Basti* is a procedure in which, warm medicated oil is retained within a specially formed frame in the cervical region for a specific duration. *Greeva Basti* is a variety of *Snigdha Sweda* and it serves the purpose of both *Snehana* and *Swedana*. It is commonly used in the management of disorders of *Greeva* caused by vitiation of *Vata*. *Greeva Hundanam* is a condition in which vitiated *Vata* lodges in the neck region and leads to stiffness of the neck with signs and symptoms of vitiation of *Vata*. The word *Greeva* means neck. The word *Hundanam* conveys two meanings. The first one is "*Shiro Prabhrutinam Antah Praveshā*". It means inward intrusion of the head and its allied parts. It is possible due to implication with cervical parts. Structural deformity is also a suggestive condition. The other meaning is "*Greeva Stambhā*", which denotes the restriction of the movements of the neck. Cervical Spondylosis is the degenerative condition of the cervical spine with signs and symptoms like neck pain, numbness, muscle spasm, neck stiffness, restricted range of movements of neck etc. Signs and symptoms of *Greeva Hundanam* resembles with that of Cervical Spondylosis. So both Clinical Conditions can be compared with each other. *Tila Taila* is having *Vatahara* property used in treating *Vatavyadhi*. *Tila Taila* used in *Greeva Basti* was beneficial in reducing the signs and symptoms of *Greeva Hundanam*.

**Keywords:** *Greeva Basti, Greeva Hundanam, Tila Taila, Cervical Spondylosis*

## **INTRODUCTION**

Basic core of Ayurvedic treatment consists of six therapies i.e. *Langana*, *Brimhana*, *Rukshana*, *Snehana*, *Swedana* and *Stambhana*. Among these *Snehana* and *Swedana* plays a major role in the management of disorders caused due to vitiation of *Vata*. *Snehana* causes *Sneha* (unctuousness), *Vishyandata* (liquefaction), *Mardavata* (softness) and *Kledata* (moistness) in the body. *Swedana* is capable of mitigating *Stambha* (stiffness), *Gaurava* (heaviness) and *Sheeta* (coldness). It is broadly classified in to *Snigdha* and *Ruksha* variety based on the property of the materials used for the procedure<sup>1</sup>.

*Greeva Basti* is a *Snigdha Swedana* procedure conducted over the cervical region by retaining warm medicated oil within a specially formed frame for a specific duration. A frame of black gram paste is made around the painful cervical region. Junction between the frame and skin is sealed to make it leak proof. Warm medicated oil is poured into this frame. This warm oil heats the affected area inducing perspiration. This is the procedure of *Greeva Basti*. It is indicated in painful conditions of

cervical region like, Cervical Spondylosis, Spondylyolysthesis, Disc prolapse, Ankylosing spondylitis, Rheumatoid arthritis etc<sup>2</sup>.

*Greeva Hundanam* is a clinical condition occurring in the neck region. It is caused due to the vitiation of *Vata dosha*<sup>3</sup>. It comprises of two words *Greeva* and *Hundanam*. The word "*Greeva*" means the neck<sup>4</sup> and *Hundanam* means inward intrusion of the head and its allied parts. The other meaning is *Greeva Stambha* which means stiffness of neck<sup>5</sup>.

Cervical Spondylosis is a degenerative osteoarthritis of the cervical spine may produce neck pain that radiates in to the back of the head, shoulder or arms or may be source of head ache in the posterior occipital region<sup>6</sup>. It is a common disease affecting the middle and old age group of both sex and prevalent worldwide, lifetime incidence of cervical Spondylosis is said to be 40-60%<sup>7</sup>.

Signs of Cervical Spondylosis are localised tenderness, limited range of movement. Symptoms are cervical pain aggravated by movement, referred pain (occiput, between the shoulder blades,

upper limbs), retro-orbital or temporal pain (from C<sub>1</sub> to C<sub>2</sub>), cervical stiffness—reversible or irreversible, vague numbness, tingling, or weakness in upper limbs, dizziness, poor balance, rarely syncope, triggers migraine<sup>8</sup>. Signs and symptoms resembles with *Greeva Hundanam*. So both Clinical Conditions may be compared with each other.

*Tila Taila* (Sesame oil) is considered as the best among the various oils. *Tila Taila* is the best *dravya* for *vata dosha*. *Taila* alleviates *vata dosa*, but does not aggravate *kapha dosha*. It is used in all types of dislocations of joints and fractures<sup>9</sup>.

So in this study an attempt was done to evaluate the effect of *Greeva Basti* with *Tila Taila* in reducing the signs and symptoms of *Greeva Hundanam*.

#### **OBJECTIVES OF THE STUDY**

To evaluate the efficacy of *Greeva Basti* in *Greeva Hundanam* (Cervical Spondylosis) **HYPOTHESIS**

**H<sub>0</sub>** – There is no effect of *Greeva Basti* in *Greeva Hundanam* (Cervical Spondylosis) with *Tila Taila*.

**H<sub>1</sub>** – *Greeva Basti* has effect in *Greeva Hundanam* (Cervical Spondylosis) with *Tila Taila*.

#### **MATERIALS AND METHODS**

##### **SOURCE**

##### **LITERARY SOURCE:**

All the Ayurveda and contemporary texts including the websites about the disease procedure and drug were reviewed and documented for the study.

##### **SAMPLE SOURCE:**

Patients suffering from *Greeva Hundanam* (Cervical Spondylosis) were selected from OPD and IPD of Panchakarma of Alva's Ayurveda Medical College Hospital, Moodabidiri.

##### **DRUG SOURCE:**

*Tila Taila* were procured from the local market.

##### **METHOD OF COLLECTION OF DATA**

I. **Study design:** Single group clinical study.

II. **Sample Size:** 20patients suffering from *Greeva Hundanam* (Cervical Spondylosis) fulfilling the diagnostic and inclusion criteria belonging to either sex irrespective of socio-economic status and caste were selected for the clinical study.

III. **Selection Criteria:** The cases were selected as per signs and symptoms of *Greeva Hundanam* (Cervical Spondylosis).

**A CLINICAL STUDY ON GREEVA BASTI IN GREEVA HUNDANAM (CERVICAL SPONDYLOSIS) WITH TILA TAILA**

**DIAGNOSTIC CRITERIA:**

- *Greeva Shoola*
- *Greeva Sthamba*

**INCLUSION CRITERIA:**

Patients having classical signs and symptoms of *Greeva Hundanam* and Cervical Spondylosis.

- Patients between 20 to 70 years of age.

- Patients who are fit for *Snigdha Sweda*.

**EXCLUSION CRITERIA:**

- Patients having associated conditions like Fibrositis, Rheumatoid Spondylosis, and Ankylosing Spondylosis will be excluded.
- Patients with history of traumatic injury to the cervical spine.

**PROCEDURE Group- TTGB (*Tila Taila Greeva Basti*)**

**Table no: 1; Greeva Basti Procedure**

Sl. No		Procedure
1	Purvakarma	<p><b>Preparation of the dough:</b> The black gram flour is well mixed with sufficient quantity of warm water into a thick paste. It is then made into flat slab-like structure.</p> <p><b>Preparation of patient:</b> After passing stool and urine properly patient is asked to lie down on the table in prone position with neck and head straight, The cervical region is well exposed and arms keeping under the forehead. Then the dough is pasted in a circular manner on the neck.</p>
2.	Pradhana Karma	<p>Warm medicated oil is poured in to this frame. Oil is heated in a Water bath. The heat of the medicated oil should be sufficient enough to tolerate by the patient. This oil is poured in to the frame. The upper level of the oil should be approximately 1 inch above the skin. The oil poured in the beginning gets cooled as time passes. When it gets cooled, the oil is taken out from the frame with the help of a spoon. Alternatively one can soak a piece of cotton cloth in the oil to remove and add the oil. Fresh warm oil is then poured in to the frame. The cooled oil that</p>

**A CLINICAL STUDY ON GREEVA BASTI IN GREEVA HUNDANAM (CERVICAL SPONDYLOSIS) WITH TILA TAILA**

		is taken out is now kept in the water bath for heating, and will be reused later during the procedure of <i>Greeva Basti</i> . In this way as the oil in the frame cools down, it should be replaced by the warm one. This procedure of heating the cervical region with warm oil is continued for about half an hour.
3.	Paschat Karma	The oil and the frame are removed. Then the area is wiped off and cleaned with a towel dipped in hot water. This completes the procedure of <i>Greeva Basti</i> .

**STUDY DURATION**

- Group- TTGB – Total study duration – 7 days

**OBSERVATION PERIOD**

- Initially on the first day before treatment.
- On the 7<sup>th</sup> day after treatment.

**Follow up**

On 14<sup>th</sup> Day, and 28<sup>th</sup> day after completion of treatment Protocol.

**ASSESSMENT CRITERIA**

Assessment of the condition was done based on the detailed Proforma adopting standard method of scoring of subjective and objective parameters which was analysed statistically.

**SUBJECTIVE CRITERIA**

- Neck Pain
- Neck Stiffness
- Neck Disability Index

**OBJECTIVE CRITERIA**

- Flexion
- Extension
- Right Lateral Flexion
- Left Lateral Flexion
- Right Rotation
- Left Rotation

**A CLINICAL STUDY ON GREEVA BASTI IN GREEVA HUNDANAM (CERVICAL SPONDYLOSIS) WITH TILA TAILA**

Measured by using Goniometer and based on degree obtained by using Goniometer, statistically values are analysed.

**STATISTICAL TEST:**

Obtained data was analysed statistically with student't' test and relevant statistical test.

**INVESTIGATIONS:**

X-RAY Cervical Spine AP View and Lateral View.

**GRADING FOR ASSESSMENT CRITERIA**

**NECK PAIN**

**Table no: 2; Grading of Pain**

<b>SYMPTOMS</b>	<b>GRADING</b>
No Pain	0
Pain in the neck	1
Pain in the neck, mild aggravation with movement	2
Pain in the neck, moderate aggravation with movement	3
Pain in the neck, severe aggravation with movement	4
Pain in the neck, Severe aggravation with movement and Disturbs Sleep	5

**NECK STIFFNESS**

**Table no: 3; Grading of Stiffness**

<b>SYMPTOMS</b>	<b>GRADING</b>
No Stiffness	0
Sometimes for 5 - 10 min	1
Daily for 10 - 30 min	2
Daily for 30 - 60 min	3
Daily more than 1 hr	4
Severe, unable to move	5

**NECK DISABILITY INDEX**

Assessment of pain by Neck disability index and obtained value statistically analysed

**Table no: 4; ASSESSMENT OF TOTAL EFFECT OF THE THERAPY**

**A CLINICAL STUDY ON GREEVA BASTI IN GREEVA HUNDANAM (CERVICAL SPONDYLOSIS) WITH TILA TAILA**

<b>GRADING</b>	<b>PERCENTAGE</b>
Complete	76 – 100%
Marked	51 – 75%
Moderate	26 – 50%
Mild	1 – 25 %
No improvement	0%

**OBSERVATIONS AND RESULTS**

**Table no: 5; Showing the Observations of the Clinical Study**

<b>SI No</b>	<b>OBSERVATION</b>		<b>GROUP TTGB (NO OF PATIENTS=20)</b>
1.	Age	20 - 30	13
		31 - 40	2
		41 – 50	2
		51 – 60	3
		61 - 70	0
2.	Sex	Male	15
		Female	5
3.	Occupation	House Wife	1
		Office Work	5
		Teacher	1
		Student	12
		Business	1
4.	Marital Status	Married	7
		Unmarried	13
5.	Socio Economic	Higher	3
		Middle	15
		Poor	2
6.	Food	Vegetarian	2
		Mixed	18
7.	Appetite	Good	15

**A CLINICAL STUDY ON GREEVA BASTI IN GREEVA HUNDANAM (CERVICAL SPONDYLOSIS) WITH TILA TAILA**

		Poor	5
8.	Bowel	Regular	10
		Irregular	4
		Constipated	6
9.	Nature of Work	Strenuous	5
		Moderate	14
		Sedentary	1
10.	Sleep	Sound	15
		Disturbed	5
11.	Habits	Nil	10
		Tea/Coffee	9
		Smoking	0
		Alcohol	1
12.	Prakruti	Vata	3
		Pitta	0
		Kapha	0
		VataPitta	1
		VataKapha	9
		KaphaPitta	7
		Tridosha	0
13.	Sara	Pravara	2
		Madhyama	14
		Avara	4
14.	Samhanana	Pravara	2
		Madhyama	15
		Avara	3
15.	Ahara Shakti	Pravara	1
		Madhyama	15
		Avara	4
16.	Koshta	Pravara	2
		Madhyama	11



**A CLINICAL STUDY ON GREEVA BASTI IN GREEVA HUNDANAM (CERVICAL SPONDYLOSIS) WITH TILA TAILA**

		Avara	7
17.	Vyayama Shakti	Pravara	1
		Madhyama	6
		Avara	2
18.	Agni	Manda	2
		Tikshna	3
		Sama	11
		Vishama	4
19.	Chronicity	1 – 6 month	7
		7 – 12 month	7
		1 – 2 year	6

**RESULTS**

**EFFECT OF GROUP TTGB ON NECK PAIN IN GREEVA HUNDANAM**

Statistical analysis in Group 'TTGB' showed that the mean score which was 3.45 before treatment reduced to 1.70 after treatment and after 1<sup>st</sup> and 2<sup>nd</sup> follow up it became 1.60. When these values were analysed statistically the difference was highly significant at the level of  $P < 0.001$ .

**EFFECT OF GROUP TTGB ON NECK STIFFNESS IN GREEVA HUNDANAM**

Statistical analysis in Group 'TTGB' Showed that the mean score which was 2.85 before treatment reduced to 1.40 after treatment and after 1<sup>st</sup> and 2<sup>nd</sup> follow up it became 1.40. When these

*PIJAR/July-August-2020/VOLUME-5/ISSUE-4*

values were analysed statistically, the difference was highly significant at the level of  $P < 0.001$ .

**EFFECT OF GROUP TTGB ON NECK DISABILITY INDEX**

Statistical analysis in Group 'TTGB', showed that the mean score which was 24.45 before treatment reduced to 13.70 after treatment. After 1<sup>st</sup> follow up it became 13.45 and after 2<sup>nd</sup> follow up it became 13.45. When these values were analyzed statistically, the difference was highly significant at the level of  $P < 0.001$ .

**EFFECT OF GROUP TTGB ON NECK FLEXION IN GREEVA HUNDANAM**

Statistical analysis in Group 'TTGB' showed that the mean score which was 32.63 before treatment increased to 42.00 after treatment. After 1<sup>st</sup> follow

up it became 46.63 and after 2<sup>nd</sup> follow up it became 49.75. When these values were analysed statistically, the difference was highly significant at the level of  $P < 0.001$

**EFFECT OF GROUP TTGB ON NECK EXTENSION IN GREEVA HUNDANAM**

Statistical analysis in Group 'TTGB', showed that the mean score which was 33.88 before treatment increased to 51.75 after treatment. After 1<sup>st</sup> follow up it became 55.38 and after 2<sup>nd</sup> follow up it became 58.38. When these values were analysed statistically, the difference was highly significant at the level of  $P < 0.001$

**EFFECT OF GROUP TTGB ON RIGHT LATERAL FLEXION IN GREEVA HUNDANAM**

Statistical analysis in Group 'TTGB' showed that the mean score was 27.75 before treatment which was increased to 36.50 after treatment. After 1<sup>st</sup> follow up it became 41.13 and after 2<sup>nd</sup> follow up it became 44.13. When these values were analyzed statistically, the difference was highly significant at the level of  $P < 0.001$ .

**EFFECT OF GROUP TTGB ON LEFT LATERAL FLEXION IN GREEVA HUNDANAM**

Statistical analysis in Group 'TTGB' showed that the mean score was 29.00

before treatment which was increased to 42.63 after treatment. After 1<sup>st</sup> follow up it became 44.74 and after 2<sup>nd</sup> follow up it became 45.38. When these values were analysed statistically, the difference was highly significant at the level of  $P < 0.001$ .

**EFFECT OF GROUP TTGB ON RIGHT ROTATION IN GREEVA HUNDANAM**

Statistical analysis in Group 'TTGB', Showed that the mean score was 62.88 before treatment which was increased to 73.00 after treatment. After 1<sup>st</sup> follow up it became 76.25 and after 2<sup>nd</sup> follow up it became 77.50. When these values were analyzed statistically, the difference was highly significant at the level of  $P < 0.001$

**EFFECT OF GROUP TTGB ON LEFT ROTATION IN GREEVA HUNDANAM**

Statistical analysis in Group 'TTGB', showed that the mean score which was 67.00 before treatment and was increased to 77.75 after treatment. After 1<sup>st</sup> follow up it became 82.88 and after 2<sup>nd</sup> follow up it became 84.25. When these values were analyzed statistically, the difference was highly significant at the level of  $P < 0.001$ .

**ASSESSMENT OF OVERALL EFFECT OF TREATMENT**

**Table no: 6; OVERALL EFFECT OF GROUP TTGB**

<b>Effect of Treatment in Group in TTGB</b>		
Percentage	Grading	No of Patients
76 - 100%	Complete	1
51 - 75%	Marked	4
26 - 50 %	Moderate	13
1 - 25 %	Mild	2
0	No improvement	0

**Table no. 7; RESULT OF GROUP TTGB**

<b>Characteristics</b>	<b>Group TTGB</b>		
	Mean Score		Percentage of relief
Signs and Symptoms	BT	AT	
Pain	3.45	1.70	50.72%
Stiffness	2.85	1.40	50.8%
Flexion	32.63	42.00	28.71%
Extension	33.88	51.75	52.74%
Right Lateral Flexion	27.75	36.50	31.53%
Left Lateral Flexion	29.00	42.63	47%
Right Rotation	62.88	73.00	16.09%
Left Rotation	67.00	77.75	16.04%
Neck Disability Index	24.45	13.70	43.96%

**RESULT OF GROUP TTGB**

The percentage of improvement of group TTGB on pain is 50.72%, stiffness is 50.8%, flexion is 28.71%,

extension is 52.74%, right lateral flexion is 31.53%, left lateral flexion is 47%, right rotation is 16.09%, left

rotation is 16.04% and neck disability index is 43.96%.

## **DISCUSSION**

*Greeva Hundanam* is one of the general symptoms of *Vata Vyadhi*. It comprises of two words *Greeva* and *Hundanam*. *Greeva* means neck and *Hundanam* means inward intrusion of the head and its allied parts. The other meaning is *Greeva Stambha* means stiffness of neck. *Greeva Hundanam*, though not mentioned in *Vataja Nanatmakara Vikaras*, is manifested due to *Vata Prakopajanya Nidanas* and hence alone *Vata Dosha* acts as the enforcing component causing this disability. Due to vitiation of *Vata dosha* the disorder *Greeva Hundanam* manifests. According to the definition given by *Chakrapani Greeva Hundanam* is a disorder in which the structural deformity occurs in the neck and its allied parts (*Hundanam: - "Shiro Prabhrutinam Antah Pravesha"*). In the classics there are some other words mentioned which are indicative of pathology in neck region like *Manya Graha*, *Manya Stambha*, *Greeva Stambha*, *Asthi avruta Vata*, *Greeva Hundanam*.

*Greeva Basti* is a *Snigdha Sveda* procedure, inspired by the procedure of

*Shiro Basti*. A circle of dough is prepared in the *Greeva* region and prescribed oil with comfortable temperature is made to stay there for certain time duration. *Greeva Basti ring* made up of *Masha Choorna* -350 gm. is required for each day. During the study it has been observed that minimum of 250 ml *Taila* is required for each day. In the present study, temperature up to 45<sup>0</sup>C to 50<sup>0</sup> C was recorded in patients who are having *Vata* and *Kapha* predominance since they showed tolerance to temperature more than people of other *Prakruti*. The persons who were having *Pitta* predominant *Prakruti* i.e. *Pitta Vata* and *Pitta Kapha* showed less tolerance and temperature varied from 40<sup>0</sup> C to 41<sup>0</sup> C in such patients. In such patients, to maintain the specified temperature the frequency of changing was more. Hence it may be viewed that a fixed temperature cannot be taken as standard. A range of minimum of 30 minutes and maximum of 45 minutes may be considered as standard depending upon the patient's ability to maintain the prone position for given duration of treatment. In the present study the duration of procedure is fixed to 30 min. In the present study, the

patients who are having *Vata* and *Kapha* predominance showed tolerance to temperature more than People of other *Prakruti*. The persons who were having *Pitta* predominant *Prakruti* i.e. *Pitta Vata* and *PittaKapha* showed less tolerance to higher temperature in comparison. This shows that the *Pitta Dosh* where in tolerance to *Ushna Guna* is minimal. Hence it may be viewed that persons who are having predominance of *Vata* and *Kapha Prakruti* may tolerate more temperature when compared to *Pitta* predominant *Prakruti*. *Greeva Basti* procedure is a *Bahya Shamana Chikitsa*. It is a type of *Bahya Snehana* and *Svedana* therapy. *Snehana* has got *Vatahara* property and *Svedana* has the properties of reducing *Stambha*, *Gaurava* and *Sheetata*. In *Greeva Hundanam* there is mainly neck stiffness is there and that may be relieved by the hot oil which is used during *Greeva Basti* procedure.

*Tila Taila* which has *Vatahara* property, *Ushna Veerya*, acts on *Sheetaguna* of *Vata Dosh* thus pacifying it. When they are heated and used for *Greeva Basti* which help in the reduction of pain, stiffness which is the main complaints in Cervical Spondylosis (*Greeva Hundanam*)

The prolonged hot oil application causes the rise of temperature at the area of application, produces sedation effect at the application site, which leads to dilatation of capillary at the terminal region and contraction of internal vessels. Thereby the blood is drawn towards the periphery finally promoting the phagocytosis process and also combating any inflammatory process. Also it helps in drainage of excessive fluid through lymphatic drainage by stimulating the lymphatic.

#### **CONCLUSION**

- The study was intended to prove the efficacy of *Greeva Basti* with *Tila Taila* in *Greeva Hundanam* (Cervical Spondylosis)
- From the clinical trials, observations and discussions it can be concluded that *Greeva Basti* with *Tila Taila* have significant relief in all the signs and symptoms of *Greeva Hundanam*.
- Subjective parameters like pain, stiffness and neck disability index have highly significant relief in the groups at the level  $P < 0.001$ . And not significant improvement were found in objective criteria like flexion, extension, right lateral flexion, left lateral flexion, right

**A CLINICAL STUDY ON GREEVA BASTI IN GREEVA HUNDANAM (CERVICAL SPONDYLOSIS) WITH TILA TAILA**

rotation at the level of  $P > 0.05$ , Significant improvement were found only in left rotation  $P < 0.05$ .

- So  $H_1$  is accepted.  $H_1$ – *Greeva Basti* have significant effect with *Tila Taila* in *Greeva Hundanam* (Cervical Spondylosis).

**REFERENCES**

1. Agnivesa, Charaka Samhitha with Ayurveda Deepika commentary of Chakrapani Datta, edited Vaidya Jadavji Trikamji Acharya, published by Chaukhamba Surabharati Prakashan Varanasi, reprinted (2011), Sutrasthana 22:11 pp :120.
2. Panchakarma illustrated by Dr.G.Shrinivasa Acharya Published by Chaukhamba Sanskrit Pratishthan ,reprinted(2015) pp:259
3. Acharya JT.Charaka Samhitha by Agnivesa with Ayurveda Deepika teeka of Chakrapanidatta.Reprinted(2011), Published by Chaukhambha Orientalia Varanasi.Vol. IV pp 694-95
4. M.Monier Williams,A sanskrit english dictionary published by parimal publication,first new recomposed edition (2008) pp 549.
5. Agnivesa,Charaka Samhitha with Ayurveda Deepika commentary of Chakrapani Datta, edited Vaidya Jadavji Trikamji Acharya, published by Chaukhamba Surabharati Prakashan Varanasi, reprinted (2011), Chikitsasthana 28:22 pp 617.
6. Harrison's Principles of Internal Medicine edited by Anthony.S.Fauci,Eugene Braunwald,Dennis L.Kasper,Stephen L.Hauser,Dan L.Longo,j.Larry Jameson, Joseph Loscalzo,Jameson Vol-17<sup>th</sup> edition Reprint 2008,Vol-1Page No.116
7. Davidson's Principles And Practices of Internal Medicine 19<sup>th</sup> edition, by Churuchil Livingston,Narcourt Brace and Company Ltd. Page No.1189
8. BMJ.2007 Mar 10;334(7592):527-531.doi 10.1136/bmj.3917.60299.80. Article.Allan I Binder,Consultant Rheumatologist Copy right BMJ Publishing Group Ltd 2007
9. Bhavaprakasa of Bhavamisra Commentary by Dr.Bulusu Sitaram,Published By Chaukhambha Orientalia Varanasi.Vol-1,Chapter-6(Taila varga),PP.541

**Corresponding author:**

**Sreejith.J.R**, Final year P.G Scholar,  
Department of P.G studies in Panchakarma, Alva's  
Ayurveda Medical College and Hospital, Moodabidri, D.K  
District, Karnataka, India  
Email: [drsreejith9@gmail.com](mailto:drsreejith9@gmail.com)

**Published BY:**  
*Shri Prasanna Vitthala Education  
and Charitable Trust (Reg)*

**Source of Support: NIL**  
**Conflict of Interest : None declared**