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## A Clinical Evaluation on the Effect of *Dwipanchamooladi Niruha Basti* in the Management of Hypothyroidism.

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### ABSTRACT

The modern era lifestyle which is predominantly sedentary and full of stress has led to alterations in the activities of neuro-endocrine systems thereby causing newer health challenges. Hypothyroidism is an autoimmune condition that needs attention with respect to management as it hampers the quality of life. In ayurveda, direct references are not present stating the symptoms of the disease but it can be treated with ayurvedic principles. Thus, a clinical study was conducted to evaluate the effect of *Dwipanchamooladi Niruhabasti* (Decoction enema) on Hypothyroidism. In the study, 15 patients were registered and treated. A special proforma was prepared with all points of history taking, physical signs, and symptoms as quoted in Ayurvedic literatures and modern endocrinology texts. All the patients were given *Dwipanchamooladi Niruhabasti* and *Anuvasanabasti* (Oil enema) was given with 100ml of *BrihatSaindhavaditaila* in modified *yoga basti* schedule for 5 days. The cardinal symptoms like *agnidourbalya* (loss of appetite) (53%), weight gain (30%), constipation (44%), oedema (43%), dry skin (45%), lethargy (48%) etc were reduced moderately. Haematological parameters like serum TSH levels (44%) were reduced. After observing the changes during and after the treatment it may be opined that, *DwipanchamooladiNiruhaBasti* is beneficial in treating the signs and symptoms of Hypothyroidism.

### KEYWORDS

*Panchakarma; Basti; Hypothyroidism; DwipanchamooladiNiruhabasti*



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## INTRODUCTION

The modern era lifestyle which is predominantly sedentary and full of stress has led to alterations in the activities of neuro-endocrine systems thereby causing newer health challenges. Hypothyroidism is an autoimmune condition that needs attention with respect to management as it hampers the quality of life. They are grossly divided into Hypothyroidism, Hyperthyroidism, Thyroid nodules, Neoplastic processes and Goitre<sup>1</sup>. Hypothyroidism is an autoimmune condition, a clinical syndrome characterized by elevated levels of thyroid stimulating hormone (TSH) or by low levels of triiodothyronine (T3) and thyroxine (T4). Hypothyroidism is not a single disease entity, there are many systems involved in the pathogenesis of Hypothyroidism. There is currently no treatment to cure Hypothyroidism. Many studies are looking at treatment that might improve quality of life of a Hypothyroid patient.

The prevalence of hypothyroidism in the developed world is about 4-5% and that of subclinical hypothyroidism is about 4-15%. India has a high prevalence of hypothyroidism, which is about 10%. It is much more common in females than males i.e., 6:1 ratio<sup>2</sup>. The condition most

commonly afflicts middle aged women who perhaps attribute their symptoms wrongly to ageing or menopause, hyperlipidaemia, depression etc. Also, one out of every 5000 infants is born without a working thyroid gland.

In Ayurveda, considering it as *mandagni*(decreased metabolism), *samprapti*(pathogenesis) is formed where, *kaphavatakaraaharaviharanidanasevana*(causes) leading to *kaphapradanatridoshaprakopa*, further leads to *jataragnimandya*(*ama*uptatti) causing *dhatwagnimandya* leading to *uttarottaradhatwagnimandya* manifesting various symptoms like *agnisada*(decreased appetite), *asrugdara*(menstrual irregularities), *galaganda*(swelling in the neck), *atistula*(over weight) etc<sup>3</sup>.

The modern treatment of hypothyroidism is Levothyroxine sodium but it has certain side-effects on long term use and develops dependency in patients. Increased dosage and daily usage of the medicine is not economical. So, there is a great need to find out a safe and effective remedy which not only relieve symptoms but also increase the quality of life. Thus, here an attempt is made to manage Hypothyroidism with *panchakarma* therapy after compiling all the references from the classics.

By analyzing the benefits of *DwipanchamooladiNiruhaBasti* where it is



having the action on normalizing the *VataKaphaDosha's* due to its *vata-kaphahara* (decreases *vata* and *kapha* bodily humors), *medohara* (depleting action), *amahara*, *lekhanaguna* and also acts in conditions of *Amadosha* and *Agnimandya*. Hence *DwipanchamooladiNiruhaBasti* may be able to show beneficial effect in the management of Hypothyroidism.

Hence, this study was planned to evaluate the effect of *DwipanchamooladiNiruhaBasti* administered in modified *Yoga Basti* schedule in the management of Hypothyroidism.

## METHODOLOGY

### Source of data

Minimum of 15 selected patients diagnosed as Hypothyroidism & fit for Basti Karma was taken for the study from the OPD and IPD of Sri DharmasthalaManjunatheshwara College of Ayurveda Hospital, Hassan.

### Source of drug

Required drugs was taken from Sri DharmasthalaManjunatheshwara Pharmacy of Udupi and Hassan. Other raw drugs are taken from the market and prepared in Sri DharmasthalaManjunatheshwara Pharmacy Hassan.

### Method of collection of data

This is an open labelled clinical study to evaluate the effect of *DwipanchamooladiNiruhaBasti* in Hypothyroidism. A special proforma will be prepared with all points of history taking, physical signs, symptoms as quoted in Ayurvedic literatures and lab investigations will be carried out as mentioned in Allied sciences if necessary. The selected patients will be subjected to detail clinical history and complete physical examination before undergoing the clinical study.

### Diagnostic criteria

1. TSH value : >5.0 mIU/ml - <40 mIU/ml. It may or may not be associated with the decrease in serum T<sub>3</sub> and T<sub>4</sub> concentration.

2. The diagnosis of the disease is mainly based on the signs and symptoms mentioned in modern text<sup>4</sup> and classical texts as follows:-

Anaemia, Puffiness of face, Weight gain, Cold intolerance, Fatigue, Somnolence, Constipation, Depression, Dry skin, Dry hair, Menstrual irregularities, *Atinidra*(Insomnia), *Agnimandya*(Decreased appetite).

### Inclusion Criteria

• Patients who are freshly diagnosed as Hypothyroidism.



- Patients who are already diagnosed as Hypothyroidism and under Thyronorm [Levothyroxine] medication are included.
- Patients between the age of 18 to 60 years.
- The patients fit for *BastiKarma*(Medicated enema).
- Those patients who are ready to sign informed consent form.

### Exclusion Criteria

- Patients with Cardiac disorders, Thyrotoxicosis, Carcinomas of the Thyroid Gland, Myxedema and its complications.
- Patients associated with systemic disorders like IHD.
- Post-operative Hypothyroidism, Hypothyroidism Post Radio, Iodine Therapy, Hypothyroidism in pregnancy.
- Patients suffering from Congenital Anomalies, Congenital Hypothyroidism and Secondary Hypothyroidism.
- Pregnant women, Toxic Goitre.

### Investigations

- Blood : Hb gm%, RBS ( Random Blood Glucose )
- Thyroid Function Test : Serum T<sub>3</sub>, Serum T<sub>4</sub>, Serum TSH ( Thyroid Stimulating Hormone)

### Design of the study

This is an open labelled clinical study with Pre-test and Post-test design wherein a minimum of 15 patients suffering from Hypothyroidism will be selected irrespective of their gender, caste or creed

conducted in a tertiary Ayurvedic Hospital. The parameters of signs and symptoms will be analyzed statistically.

### BASTI KARMA

All subjects are administered with *DwipanchamooladiNiruhabasti* and *Anuvasanabasti* with 100 ml of *BrihatSaindavadiTaila* in modified Yoga Basti Schedule.

1 <sup>st</sup> day	2 <sup>nd</sup> day	3 <sup>rd</sup> day	4 <sup>th</sup> day	5 <sup>th</sup> day
A	N	N	N	A
	A	A	A	

**Note:- A-AnuvasanaBasti**

### N- Niruhabasti

### Method of Preparation of NiruhaBasti

### Ingredients of Niruha basti-<sup>5</sup>(Approximately)

**TABLE 1** quantity of ingredients of *dwipanchamooladi basti*

1. <i>Madhu</i> (Honey)	4 <i>pala</i>	190ml
2. <i>Saindhava lavana</i> (Rock salt)	$\frac{3}{4}$ <i>thkarsha</i>	10gms
3. <i>Yava kshara</i> (Alkali)	1 $\frac{1}{4}$ <i>th karsha</i>	15gms
4. <i>BrihatSaindavadiTaila</i>	2 <i>pala</i>	100ml
5. <i>Kalka</i> (Paste of Herbs)	2 <i>pala</i>	100gms
6. <i>Kvatha</i> (Decoction)	6 <i>pala</i>	290ml
7. <i>Gomutra</i> (Cow's urine)	2 <i>pala</i>	100 ml
Total	16 <i>Pala</i>	790ml

To prepare

*DwipanchamooladiNiruhaBasti*, the contents were mixed in a particular fashion as mentioned in classics i.e. initially 190 ml *Madhu* and 10 gms of *SaindhavaLavana* were taken in a *Khalvayantra*(Mortar pestle) and mixed homogenously, after that 100ml of *BrihatSaindavadiTaila* was taken



and mixed to form uniform mixture, there after 100 gms of *Kalka* made of fine *churna's* of *VatsakaBeeja*(*Holarrhenaantidysentrica*), *Madanaphala*(*Randiadumetorum*), *Patha*(*Cissampelospareira*), *Musta*(*Cyperusrotandus*) were added to above mixture. It was followed by the mixing of 290 ml of *Kwatha Dravya* prepared with *kwathachurna's* of *Dashamoola*, *Triphala*, *Madanaphala*, *Bilvamoola*. Finally 100ml of *Gomutra* was added and mixed thoroughly to form a homogenous mixture and tested for *Suyojita Niruh aLakshana's*. Then the whole of the *Basti Drava* was filtered and it was administered after making it lukewarm indirectly by heating in the vessel of water. The particular pattern of mixing the *Basti Dravya* is followed so that all the contents were mixed properly and finally a uniform mixture is obtained.

## INTERVENTION

### **NIRUHA BASTI**

#### ***Poorva Karma***

Patient was asked to be on empty stomach and made to lie on the cot. *SthanikaAbhyanga* with *BrihatSaindavadiTaila* was performed followed by *Nadi Sweda* over lower abdomen, back and thighs of the patient.

#### ***Pradhana Karma***

Patient was asked to lie in the left lateral position by keeping left leg straight and right leg flexed at the knee joint and hip joint. Anal aperture was anointed by using cotton swab dipped in oil and appropriate quantity of prepared *NiruhaBasti* was administered.

#### ***Paschat Karma***

Patients were advised to turn to supine position and lie down and wait for the urges. Patients were advised to pass the bowel after getting the urge to defecate.

### **ANUVASANA BASTI**

#### ***Poorva Karma***

Patient was asked to come for the treatment immediately after food. Before food, *Sthanika Abhyanga* with *Brihat saindavadi taila* and *Nadi Sweda*(Sudation) was done on the lower abdomen, back and thighs of the patient.

#### ***Pradhana Karma***

Patients were asked to lie in the left lateral position by keeping left leg straight and right leg flexed at the knee joint. Anus was anointed by using cotton swab dipped in oil and 100 ml of *Brihat Saindavadi Taila* was administered using rubber catheter attached to metal syringe.

#### ***Paschat Karma***

Patient was advised to lie down in supine position, and gentle tapping over the buttocks was done followed by lifting of legs 3 times alternatively and



simultaneously. Patient was advised to pass the bowel after getting the urge.

### **Duration of study**

- 1-5<sup>th</sup> day:-*Basti* in modified *Yoga Basti* schedule
- *DwigunaParihara Kala* of 16 days
- Follow up after 16 days i.e., on 21<sup>st</sup> day

### **ASSESSMENT CRITERIA**

The patients were observed during the treatment and then after the *Parihara Kala* and the change in subjective signs and symptoms assessed by suitable scoring method and objective signs using appropriate clinical tools. Details of which are given below.

#### **Subjective Parameters**

- *Agnidourbalya*

No *agnimandya*-0

Occasional *agnimandya* 1 to 2 times/ week-

1 *Agnimandya* 3 to 4 times/ week-2

Continuous *agnimandya*-3

#### **2. Dryness of Skin**

No dryness-0

Mild dryness of skin-1

Dryness experienced by cloth-2

Dryness associated with thickening and roughness of skin-3

#### **3. Oedema**

No facial puffiness-0

Noted only on keen observation-1

Observable puffiness-2

Notable puffiness-3

#### **4. Lethargy**

Instant start of work -0

Less willing at start of work -1

Less willing throughout whole work-2

No willingness at all-3

### **5. Constipation**

Absence of constipation-0

Mild constipation-1

Moderate constipation-2

Severe constipation-3

#### **Objective Parameters**

- Body weight
- Serum T<sub>3</sub>
- Serum T<sub>4</sub>
- TSH ( Thyroid Stimulating Hormone )

### **DISCUSSION**

The current era has made man to live a sedentary life. One does not have time to follow a healthy lifestyle and dietetic rules. As revolution and inventions took place, man stopped using his energy and depended completely on machines, which led to various morbidities called lifestyle disorders. One among these is Hypothyroidism.

Hypothyroidism is a condition in which the thyroid gland does not make enough thyroid hormones, characterized by a reduction in metabolic rate and it is more common in women. The main symptoms of hypothyroidism are fatigue, weakness, increased sensitivity to cold, constipation,



hoarseness, unexplained weight gain, dry skin, hair loss or coarse dry hair, muscle cramps, headache, muscle weakness, joint stiffness, elevated LDL cholesterol, depression, sleepless (if adrenals are involved) or too much sleep and memory loss. However, most symptoms take years to develop. The slower the metabolism gets, the more obvious the signs and symptoms will become. If hypothyroidism goes untreated, the signs and symptoms could become severe, such as a swollen thyroid gland (goitre), slow thought processes or dementia and impaired fertility.

“Ayurveda from its existence into the modern world is facing a major challenge. Endocrine disorders are difficult to understand in Ayurveda. Though certain disorders like Diabetes mellitus are well described in various Ayurvedic texts but as far as diseases of thyroid gland are concerned they are not well understood. In Ayurveda, we correlate the disorders caused by thyroid gland as *Galganda*(Goitre), *Gandmaala*etc but the concept of hormone overproduction or under secretion is somewhere missing. To understand Hypothyroidism with *Galganda* through various Ayurvedic principles so as to set its treatment goals one must have deep knowledge on *dosha*, *dushya*, *samprapti*, *sampraptighatakas*, *srothas*, *srotodusti*, *agni*, *ama* etc.

There is vitiation of *vata* and *kaphadoshas*, predominantly *kapha* which further results in disturbances of *Meda* and *MajjaDhatu*. *Dushti* of *Rasa dhatu* plays a major role in pathogenesis. Many of *RasajaVikaras* which have been mentioned in *Charakasamhita* are similar to the clinical features of hypothyroidism i.e. *Asradhdha*(Lethargy), *Aruchi*(Anorexia), *Gaurava*(Heaviness of body), *Tandra*(Drowsiness), *Angamarda*(Bodyache), *Panduroga*(Anaemia), *Klaibya*(Infertility), *Srotorodha*(Obstruction in the channels), *Agnimadhya*(Decreased appetite) etc. Hormonal disturbances are the dysfunction of *Agni*. *Rasadhatvagni-mandhyata* leads to *Rasa Vridhi* and over production of *Mala* of *Rasadhatu* i.e. *Mala KaphaVridhi*. *Dhatvagnimandhya* is also the major features of the disease and all these features contributes with the modern concept of metabolism i.e, decreased Basal Metabolic Rate.

The involvement of *Dosha*, *Dhatu* and *Dhatvagni* are more clear by following comparison of signs and symptoms of hypothyroidism with an Ayurvedic approach.

- 1) Anorexia: It is due to *Mandagni* by influence of *KaphaDosha* and *Rasa Dhusti*.
- 2) Constipation: From the Ayurvedic point of view, the *AppakarshaniGati* of





*Mahasrotasa*, which play a role in *Anulomana* (downward movement) of *Mala* (faeces) and *Vayu* (flatus), gets to slow down, owing to the aggravated *Kapha* in *Pakvashaya* with increase of *MandaGuna* of *Kapha*.

3) Weight Gain: Because of *Guru Guna* of *KaphaDosha* and *Pruthvi* and *JalaMahabhuta* involved in *KaphaDosha*, the weight gain occur. It can also be considered as, hypometabolism i.e. hypofunctioning of *Dhatvagni*. *Dhatvagnimandhya* leads to less formation of *Dhatu*s and thus, accumulation of *Upadhatus* and *Mala* which may result in weight gain.

4) Menstrual Disturbances: *Rasa Vridhi* occurs in hypothyroidism as augmented *Rasa* is in *AsthayiAvastha*. It may be unable to nourish *UpadhatuArtava* and *Uttar DhatuRakta*. As a result of this *ArtavaPravriti* may be disturbed.

5) Coarse and Dry Skin: Augmented *Rasa* cannot nourishes *RaktaDhatu* leads to dryness and coarseness of skin.

6) Myxedema: This non-pitting type of oedema found in hypothyroidism is due to increase in mucoprotein ground substance. This is due to *SthiraGuna* of *KaphaDosha*. In consideration of the *Doshas&Dhatu*s, concept of *Agni-Mandyata*, *Srotovarodha*, we can manage the symptoms of hypothyroidism. Among *Shodana karma*,

mainly *Vamana* and *Virechana* were in practice in treating Hypothyroidism, to understand the effect of *basti* in managing Hypothyroidism this study was conducted. *Basti* due to its *virya* spreads in the entire body as stated by *sushruta*. *DwipanchamooladiNiruhaBasti* where it is having the action on normalizing the *VataKaphaDosha*'s due to its *vata-kaphahara*, *medohara*, *amahara*, *lekhanaguna* and also acts in conditions of *Amadosha* and *Agnimandya* this particular *basti* was selected.

According to the Thyroid-gut connection, "Hippocrates says, you cannot have a healthy gut without a healthy thyroid and cannot have a healthy thyroid without a healthy gut." Our digestive tract host an array of bacteria that contribute to our health in a number of ways. One way is in the production of active thyroid hormones<sup>6</sup>. A whopping 20 percent of thyroid function depends on a sufficient supply of healthy gut bacteria to convert T4 to T3. When diets are poor and digestion falters, an abundance of bad bacteria, crowds out the beneficial bacteria, thus hampering the production of active thyroid hormone.

By analysing this Thyroid-gut connection, the mode of action of *basti* can be inferred as ;



- Enteric nervous system which is the second brain works in synergism with Central nervous system.
- Hit and run molecule i.e., though the drug won't stay for long in the body, the effect is longer just like proton pump inhibitors.
- The latest concept of system biology makes this clearer how *basti* act on the various systems. As there are multiple systems involved in Hypothyroidism, *basti* is beneficial.
- Thus *basti* may act over the receptors of the Enteric nervous system to stimulate the Central nervous system further stimulating the Hypo-thalamo-pituitary axis causing secretion of required hormones.

#### Discussion On Demographical Data

- **Age:** The inclusion criteria for patients for the study was between 18-60 yrs. Majority of patients belonged to the age group of 31-40 yrs (37%). As the study sample was smaller, it can not be concluded. But the study conducted in large sample concludes as follows; The prevalence of subclinical hypothyroidism, which is characterized by normal free thyroxine (FT4) and elevated thyrotropin (TSH) levels, increases with aging<sup>7</sup>.
- **Gender:** All the subjects were of the gender female (100%) in this study. The prevalence in female gender were found to have significant association with hypothyroidism<sup>8</sup>.

#### • **Educational & socio-economic status:**

In this study, 6% of the subjects were uneducated, primary schooling and high school, 13% mid schooling, 56% were graduates, and 13% were post graduates. Majority of subjects were graduates. 44% of the subjects belonged to middle class and 56% of subjects belonged to upper mid class. The study conducted in large sample concludes; Frequency of hypothyroidism was higher in women, browns, highly educated participants and those with high net family incomes<sup>9</sup>.

• **Treatment history:** In this study, 50% of the subjects with the history of hypothyroidism and taking levothyroxine therapy and 50% subjects without history of hypothyroidism and detected to have hypothyroidism through thyroid function tests (freshly diagnosed) were present. This suggests that a significant sample of subjects may go undetected and untreated even as it continues to impair the daily quality of life, work performance and economic productivity of an individual.

- On the other hand, among the subjects who self-reported themselves to be hypothyroid, a significant proportion still had a high TSH value.
- This calls for a review of current practices in the management of thyroid disorders.



- **Samyakbastilakshanas:** *Niruha* and *Anuvasanabastisamyaklakshanas* was analysed by using Cochran's Q test.

- In *niruha*, *PrasrustaVit*, *Mutra*, *Vata* was observed in all patients during the treatment. So this *Basti* fulfills the foremost and immediate *SamyakLakshana* of *NiruhaBasti*.

- *DwipanchamooladiNiruhabasti* has got irritant property because of the ingredients which may induce colonic distention → pressure → evacuatory reflex. A volume of about 100 cc of gas is estimated to be present in the tract which is readily expelled by *Basti*<sup>10</sup>.

- Other *lakshanas* like *ruchi*, *agnideepthi* (increased digestive fire), strength and restoration of normal health were analysed by Cochran Q test and it was statistically highly significant at the level of  $p < 0.001$ .

- ***Ruchi & Agni Deepthi*** were observed from day 2 of *Niruhabasti*. This suggests action of *BastiDravya* on a progressive order on *ApanaVata* followed by *SamanaVata*, which exhibited these symptoms

- ***AshayaLaghutva*** was observed in all patients of the study fulfilling the *SamyakLakshana* of *Basti*. This symptom was noted from the second day of administration of *Basti*.

Discussion On Subjective Parameters

- **Effect of *DwipanchamooladiNiruhabasti* on**

***Agnidourbalya*:** In Subjects treated with *DwipanchamooladiNiruhabasti* showed a decrease in *Agnidourbalya* with reduction in mean by 1.5 units. The percentage of improvement was 53%. The therapy showed statistically significant improvement at the level of  $P < 0.001$ . *DwipanchamooladiNiruhabasti* is effective in *Agnidourbalya* because of its *agnideepaka* property it kindles *agni*.

- **Effect of *DwipanchamooladiNiruhabasti* on**

**Dryness:** In Subjects treated with *DwipanchamooladiNiruhabasti* showed a decrease in Dryness with reduction in mean by 1.2 units. The percentage of improvement was 45%. The therapy showed statistically significant improvement at the level of  $P < 0.001$ . In all the subjects there was only mild dryness of skin, after *abhyanga* it might have subsided due to *snehana* and may not be because of *basti*.

- **Effect of *Dwipanchamooladi Niruhabasti* on Oedema:**

In Subjects treated with *DwipanchamooladiNiruhabasti* showed a decrease in Oedema with reduction in mean by 1.1 units. The percentage of improvement was 43%. The therapy showed statistically significant



improvement at the level of  $P < 0.001$ . As *Dwipanchamooladiniruhabasti* is a type of *lekhana* variety of *basti*, due to its *rukshana* property, it reduces the interstitial fluid accumulated in local areas of the body.

• **Effect of *DwipanchamooladiNiruhabasti* on Constipation:** In Subjects treated with *DwipanchamooladiNiruhabasti* showed a decrease in *Agnidourbalya* with reduction in mean by 1.2 units. The percentage of improvement was 43%. The therapy showed statistically significant improvement at the level of  $P < 0.001$ . Due to the *thikshnata*, *anulomakaguna* of *basti*, there was *vatashamana* and *shodana* of elementary tract.

• **Effect of *DwipanchamooladiNiruhabasti* on Lethargy:** As lethargy was one of the cardinal symptoms of Hypothyroidism as seen in all the patients, it indicates *Kaphadusti* with *Rasa dhatwagnimandya*. In Subjects treated with *DwipanchamooladiNiruhabasti* showed a decrease in Lethargy with reduction in mean by 1.3 units. The percentage of improvement was 48%. The therapy showed statistically significant improvement at the level of  $P < 0.001$ . Due to *Ushna*, *Tikshna*, *Lekhana* possessing *gunas* of drugs in

*Dwipanchamooladiniruha*, it might have combated the symptom.

Objective Parameters

• **Effect of *DwipanchamooladiNiruhabasti* on Weight:** In Subjects treated with *DwipanchamooladiNiruhabasti* showed a decrease in Weight with reduction in mean by 0.7 units. The percentage of improvement was 30%. The therapy showed statistically significant improvement at the level of  $P < 0.001$ .

• **Effect of *DwipanchamooladiNiruhabasti* on Serum T3:** In Subjects treated with *DwipanchamooladiNiruhabasti* showed an increase in serum T3 level with mean 1.61 units. The percentage of increase was 2%. The therapy showed statistically significant improvement at the level of  $P < 0.001$ . *Basti* did not show any significant changes on serum T3 level.

• **Effect of *DwipanchamooladiNiruhabasti* on Serum T4:** In Subjects treated with *DwipanchamooladiNiruhabasti* showed an increase in serum T4 level with mean 0.36 units. The percentage of increase was 4%. The therapy showed statistically significant improvement at the level of  $P < 0.001$ . *Basti* did not show any significant changes on serum T4 level.



• **Effect of *DwipanchamooladiNiruhabasti* on Serum TSH:** In Subjects treated with *DwipanchamooladiNiruhabasti* showed an decrease in serum TSH level with mean 29.49 units. The percentage of decrease was 44%. The therapy showed statistically significant improvement at the level of  $P < 0.001$ . *Basti* showed significant changes on serum TSH level.

The mode of action of *basti* on biochemical factors is difficult to understand. Further research on this may reveal the action.

## CONCLUSION

15 female patients suffering from Hypothyroidism, who visited SDM Ayurveda Hospital, were subjected to open clinical study with pre test and post test design. The patients were treated with *Basti karma*. Assessment has been done after treatment and after follow up i.e., *dwigunapariharakala*. After the completion of study following conclusions were drawn.

With the changing life style of 21<sup>st</sup> century, Hypothyroidism is considered as one of the commonest diseases. It is an autoimmune condition. There is currently no treatment to cure Hypothyroidism. Many studies are looking at treatment that might manage some of the symptoms of Hypothyroidism.

The pathological condition of Hypothyroidism can be understood through the analytical study of *Nidanapanchakas* of *Rasa pradoshajavikaras* like *Shotha*, *galaganda*, *pandu* by evaluating the symptoms of Hypothyroidism through understanding of *Dosha*, *Dushya*, *Srotas* and *Srotodushti* in the pathology.

After going through the clinical changes observed during and after the treatment of *DwipanchamooladiNiruhaBasti* it may be opined that, *DwipanchamooladiNiruhabasti* combination is beneficial in treating signs and symptoms of Hypothyroidism. So, Null hypothesis was rejected.



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