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A Clinical Study To Assess The Effect Of Vamana Purvaka Virechana Karma In Galaganda Vis-À-Vis Hypothyroidism

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ABSTRACT

Hypothyroidism as such is not mentioned in *Ayurveda* directly. Detailed study reveals vitiation of *Vata* and *Kapha* resulting *Jatharagnimandyata* and *Dhatwagnimandyata* at *Rasavaha, Raktavaha, Medovaha, Shukravaha* and *Manovaha Srotas*. *Dosha-dushya samoorchhana* in various *Dhatus* results in systemic manifestation of Hypothyroidism. Thyroid gland is situated at *urdhwa jatru* that is *Kapha sthana* hence *Kapha Dosha Pradhan vyadhi*. *Vamana Karma* with *Madanpippali yoga* as *vamaka* yoga selected for the study.As per *Acharya Vagbhata*, Hypothyroidism is *Kapha* associated *Pitta dushti* with vitiation of *Vata* due to *margavarana*. *Virechana* with *Trivrut Leha* has been selected to eliminate *doshas* and release *Margavarodh. The study was carried out on total 40 registered patients of Hypothyroidism fulfilling the diagnostic and inclusion criteria belonging to either sex irrespective of socio-economic status and religion.* The therapy provided Highly significant results on most of all parameters of assessment. Hence our treatment modality can be recommended to all the patients of Hypothyroidism.

KEY WORDS:

Hypothyroidism, *Kapha* dusti, *Jataragni- Dhatwagni mandya, Vamana, Madanaphaladi yoga, Virechana, Trivrit leham*

INTRODUCTION

The sedentary life style and stress filled modern era has led to alteration in the activities of neuroendocrine system causing newer health challenges like Hypothyroidism. Hypothyroidism is the most common form of thyroid disorder and is very commonly encountered problem in clinical practice. It is possibly among the commonest endocrine disorders worldwide.

Approximately 200 million of world's population are suffering with Thyroid disorders more commonly Hypothyroidism. In India, nearly 9 million cases reported with Hypothyroidism. Prevalence of Hypothyroidism is 1:10 but increases to 5:100 when patients with subclinical Hypothyroidism are included. The female and male ratio is approximately 6:1[1]. The signs of hypothyroidism include Dry and coarse skin, Cool extremities, Myxoedema, Diffuse alopecia, Bradycardia, Peripheral oedema, Delayed tendon reflexes, Carpel Tunnel syndrome and Serous cavity effusions. The symptoms of hypothyroidism include Tiredness, weakness, Dry skin, feeling cold, Hair loss, Poor concentration, Poor memory, Impaired Hearing, Constipation, Weight gain with poor appetite, Dyspnoea, Hoarse voice, Menorrhagia and Paraesthesia.

Hypothyroidism is not a single disease entity. There are many systems involved in the pathogenesis of Hypothyroidism. The mixed signs and symptoms of all these systems lead to complex clinical presentation of Hypothyroidism. There is no direct evidence of Hypothyroidism in Ayurvedic classics. With clinical presentation it can be correlated with certain conditions of *Dhatwagni mandya.* With context of *Galaganda*[2] and *Agni dusti* some scholars tried to correlate Endocrinal disorders with *Astanindita purush*[3].*Acharya Charaka* opined it is not possible to name all manifesting diseases. In such situation, treatment can be planned by understanding *Vikara Prakriti, Adhishtana* and *Samutthana Vishesha*[4]. Hypothyroidism can be understood and assessed by *Agni, Dosha, Dushya, Srotas* and *Srotodusti* etc. Hypothyroidism should be analysed by assessment of *Nidana panchaka*.

Management of Hypothyroidism with modern drugs may bring value of TSH and T_4 to normal range but increased dosage and continuous medication are expensive and make patient drug dependent for rest of life. Safer and long-lasting therapy is needed for present society and now it is demand of time to search the management of ailment through Ayurveda.

Involvement of *Kapha* is invariable in exhibited *Lakshana* where *Vamana* is indicated for elimination of vitiated *Kapha.* As per *Vagbhata, Vamana* eliminates *Kapha Dosha* associates with *Pitta*. Hypothyroidism is *Kaphavritta Samana Vayu* with *Pitta Guna-Karmatah Kshaya.* Vaman helps to eliminate *Doshas* and release *Margavarodha*.[5] *Kapha* is *Mala* of *Rasa Dhatu*. *Rasa Dhatvagnimandya* leads to *Malarupi Kapha Vruddhi*. *Vamana*-type of *Langhana* is a line of manangement in *Rasaja Vikara*. *Vamana* pacifies symptoms related to *Rasa Dhatu Dusti*. Hypothyroidism is *Srotorodha Pradhana vyadhi*. *Vamana* helps for *Srotovishodhana*, normalizes *Pratilomagati* of *Vata*. *Ushna, Tikshna, Sukshmaguna of Vamana Dravya* reaches to *Hridaya* by the virtue of their potency as they circulate all over body. They liquefy the morbid *Dosha* and expel it through oral route. It has direct effect on *Agni.* Overall, Vamana helps in *Samprati Vighatan Chikitsa*.

As per *Vagbhata*, Hypothyroidism is *Kapha* associated *Pitta Dushti* with vitiation of *Vata* due to *Margavarana* where *Rasavaha, Medavaha* and *Mamsavaha Srotodushti* is observed. *Virechan* with *Trivrit leham* selected to eliminate *Doshas* that release *Margavarodha*.[6] *Virechana* removes *Avarana (Sroto-shodhana)*, acts at *Dhatvagni* level corrects *Dhatvgnimandya*. Importance of *Vaman and Virechan Karma* They offer beneficial effects in Hypothyroidism by removal vitiated *Kapha and Vata Doshas*. *Sushruta* and *Vagbhata* advised *Vaman Karma in Kaphaja Galaganda*.

AIMS AND OBJECTIVES

1. To evaluate the effect of *Vamana Karma* in the management of Hypothyroidism.
2. To evaluate the effect of *Virechan* in the management of Hypothyroidism.
3. To evaluate the effect of *Vamana purvaka Virechan* in Hypothyroidism.

MATERIAL & METHODS

Patients, suffering from Hypothyroidism, were selected from O.P.D. and I.P.D. of Ayurveda mahavidhyalaya hubli.

INCLUSION CRITERIA

a) Subjects between the age of 18-58 years of either sex.

b) Subjects of Hypothyroidism with the features mentioned in the diagnostic criteria.

c) Subjects fit for *vamana karma* and *virechana karma***.**

EXCLUSION CRITERIA

a) Subjects who do not full fill inclusion criteria were excluded.

b) Subjects with cardiac disorders, thyrotoxicosis, congenital anomalies, carcinomas of Thyroid gland, Myxodema with its complications are excluded.

c) Subjects associated with any other systemic disorders are excluded.

d) Post-operative Hypothyroidism.

e) Hypothyroidism in pregnancy is excluded.

INVESTIGATIONS:

- Blood: Hb%
- Thyroid Function Test: SerumT_3, SerumT_4**,** Serum TSH (Thyroid Stimulating Hormone).
- E.C.G. if required in doubtful cases.

OBSERVATIONS

A total no. of 40 Subjects dignosed with Hypothyroidism were taken for the study who fulfilled inclusion criteria. Subjects were observed before, during and after the treatment, maximum Age:In this study, maximum number of 15 subjects (37.5 %) were between 30-40 years, 12 subjects (30.0%) were between 40-50 years, 09 subjects (22.5%) were between 20-30 years, 04 subjects (10.0%) were between 50-58 years. (90%) were Females (10%) were Males, (80%) were Hindus, (20.0%) were Muslim, (92.5%) subjects were married and (7.5%) were unmarried, (55.0%) were degree holders. (30.0%) were primary educated,(10%) were High school educated and (5.0%) were Post Graduate, (93.00%) were from Middle class,(7.00%) were poor, (73.33%) had reported with consuming Vegetarian diet and (52.5%) were with mixed diet.

(52.5%) reported regular Menstrual History,(32.55%) reported irregular cycle, (10.05%) were Male - subjects so this criteria was not applicable and (5.0%) reported with Menopause. (5.0%) analyzed as krura koshtha, maximum (90%) analyzed as Madhyama and (5.0%) analyzed as Mrudu kostha, (52.5%) were having Kapha-Pitta prakruti and (47.5%) were having Vata-Kapha prakruti. (100%) were having Madhyama Sara, (100%) were having Madhyama Samhanana, (77.5%) were of Sthoola in Akruti and (22.5%) were Madhyama in Akruti. (15.0%) were having Avara satmya, (82.5%) were having Madhyama satmya, (2.5%) was having Pravara satmya, (32.5%) were having Avara satwa, (62.5%) were having Madhyama satwa, (5%) were having Pravara satwa, (37.05%) were having No hair fall, (37.5%) had Moderate hair fall, (17.5%) were having severe hair fall , (7.5%) were having Mild hair fall, (35%) were having Normal skin, (32.5%) were having dryness of skin, (30%) were having mild dryness of skin and was having (2.5%) severe dryness of skin, (45%), Severe puffiness was experienced by only 7.5% of the subjects , (22.5%) were having mild puffiness, (25%) were having moderate puffiness present, (57.5%) were having regular Menstrual cycle, (17.5%) were having mild menstrual disturbance, (10%) were having moderate disturbance,04 subjects were male and this criteria is not applicable and (5%) were having severe menstrual disturbance, (50%) had T3 level ranges between 0.92-2.33, (25%) had T3 ranges between 2.34 – 3.75, (17.5%) had T3 ranges between 3.76- 5.17 and (5%) had T3 ranges Above 5.18, (77.5%) had T4 level ranges between 2.33-4.5 and (9%) had T4 ranges between 12.1 -19.6, (50%) had TSH level ranges between 5.60-10.88, (30%) had TSH ranges between 0.25 -5.50, (22.5%) had TSH ranges between 10.86-16.11and (12.5%) had TSH ranges Above16.12, (50%) had attained samyaka snigdha lakshana on 5th day,(37.5%) had attained samyaka snigdha lakshana on 4th day,(5%) had attained samyaka snigdha lakshana on 3rd day, (5%) had attained samyaka snigdha lakshana on 6th day, (2.5%) had attained samyaka snigdha lakshana on 7th day, 2 Vamana vega(2.5%),1 subject had attained 3 Vamana vega (2.5%) , 2 subjects had attained 4 Vamana vega (5.0%) , 15 subjects had attained 5 Vamana vega(37.5%),11 subjects had attained 6 Vamana vega (27.5%) , 6 subjects had attained 7 Vamana vega (15%) , 4 subjects had attained 8 Vamana vega (10%), subjects had attained 2 Upavega(12.5%),10 subjects had attained 3 Upavega (25%) , 7 subjects had attained 4 Upavega (17.5%) , 6 subjects had attained 5 Upavega (15%),6 subjects had attained 6 upavega (15%) , 5 subjects had attained 7 Upavega (12.5%) , 1 subject had attained 8 Upvaega (2.5%), (10%) were attained Avara vamana shuddhi,(65%) were attained Madhyama vamana shuddhi and (25%) were attained Pravara vamana shuddhi. (60%) had Kaphanta, 12 subjects (30%) had Pittanta, 04 subjects (10%) had Aushadhanta.

Kapha pitta vata kramasha nissarana was seen in 25 subjects, Hridaya suddhi was assessed in 10 aubjects, Pravara suddhi was attained in 8 subjects,Murdha suddhi was attained in 10 subjects, indriya suddhi attained in 10 subjects and laghuta was assessed in 22 subjects, (20%) were given 35gm of the Virechana drugs, (37.5%) were given 40gm of the Virechana drugs, (5%) were given 42gm of the virechana drugs, (32.5%) were given 45gm of the virechana drugs, (2.5%) were given 47gm of the virechana drugs , (2.5%) were given 48gm of Virechana drugs. (17.5%) attained Avara virechana shuddhi, (60%) attained Madhyama virechana shuddhi and (22.5%) attained Pravara virechana shuddhi. (60%) had Kaphanta, 06 subjects (15%) had Pittanta, 03 subjects (7.5%) had Vatanta and 1 subject (2.5%) had Malanta, Vata pitta Kapha kramasha nissarana was seen in 20 subjects, Vatanulomana was seen in 35 subjects, Uadara laghuta was seen in 28 subjects, Indriya prashada was seen in 09 subjects, Manasa tusthi was seen in 9 subjects and Agni vriddhi was seen in 15 subjects.

RESULTS

All the 40 subjects registered, were completed the course of treatment of 45 days and The effect of the therapy on Subjective and Objective Parameters were assessed after the complete course of treatment. The results thus obtained before treatment and after treatment were analyzed statistically. The results of Single Group in relation to the parameters of the assessment criteria pertaining to *Galaganda* were subjected to statistical analysis. The assessment was done Before treatment (BT) and After treatment (AT).

BMI:

Table 01: Effect of treatment on *BMI* within the Group

BMI	**Wilcoxon Signed Rank**	**N**	**Mean Rank**	**Sum of Rank**	**BT**	**AT**	**Z Value**	**%Of improvement**	**p Value**	**Remarks**
BT- AT	**NR**	**0**	**0**	**0**	**42**	**21**	**--4.379**	**50%**	**<0.000**	**HS**
	PR	**20**	**10.50**	**210.00**						
	Ties	**20**								

HAIRFALL:

Table 02: Effect of treatment on *HAIRFALL* within the Group

HAIR FALL	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	%Of improvement	p Value	Remarks
BT- AT	NR	0	0	0	54	30	-4.347	44.44%	<0.000	HS
	PR	21	11.00	231.00						
	Ties	19								

DRYNESS OF SKIN:

Table 03: Effect of treatment on *DRYNESS OF SKIN* within the Group

DRYNESS OF SKIN	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	% of improvement	p Value	Remarks
BT- AT	NR	0	0	0	41	14	-4.838	65.85%	<0.000	HS
	PR	25	13.00	325.00						
	Ties	15								

CONSTIPATION:

Table 04: Effect of treatment on *CONSTIPATION* within the Group

CONSTIPATION	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	% of improvement	p Value	Rema
BT- AT	NR	1	11.00	11.00	41	9	-4.540	78.05%	<0.000	HS
	PR	26	14.12	367.00						
	Ties	13								

LOSS OF APPETITE:

Table:05 Effect of treatment on LOSS OF APPETITE within the Group

LOSS OF APPETITE	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	% of improvement	p Value	Remarks
BT- AT	NR	0	0	0	23	4	-4.146	82.61%	<0.000	HS
	PR	18	9.50	171.00						

	Ties	22								

PUFFINESS OF FACE:

Table 06: Effect of treatment on *PUFFINESS OF FACE* within the Group

PUFFINESS OF FACE	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	% of improvement	p Value	Remarks
BT- AT	NR	0	0	0	38	14	-4.347	63.16%	<0.000	HS
	PR	21	11.00	231.00						
	Ties	19								

MENSTRUAL DISTRUBANCE:

Table 07: Effect of treatment on MENSTRUAL DISTRUBANCE within the Group

MENSTRUAL DISTRUBANCE:	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	% of improvement	p Value	Remarks
BT- AT	NR	0	0	0	13	04	-3.153	69.23%	<0.002	S
	PR	12	6.50	78.00						
	Ties	24								

T3:

Table 08: Effect of treatment on T3 within the Group

T3	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	% of improvement	p Value	Remarks
BT- AT	NR	1	6.00	6.00	30	15	-3.095	50%	<0.002	S
	PR	13	7.62	99.00						
	Ties	26								

T4

Table 09: Effect of treatment on *T4* within the Group

T4	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	% of improvement	p Value	Remarks
BT- AT	NR	0	0	0	9	4	-2.236	55.56 %	<0.025	S
	PR	5	3.00	15.00						
	Ties	35								

TSH:

Table 10 : Effect of treatment on *TSH* within the Group

TSH	Wilcoxon Signed Rank	N	Mean Rank	Sum of Rank	BT	AT	Z Value	% of improvement	p Value	Remarks
BT- AT	NR	1	8.00	8.00	47	11	-4.384	76.6%	<0.000	HS
	PR	25	13.72	343.00						
	Ties	14								

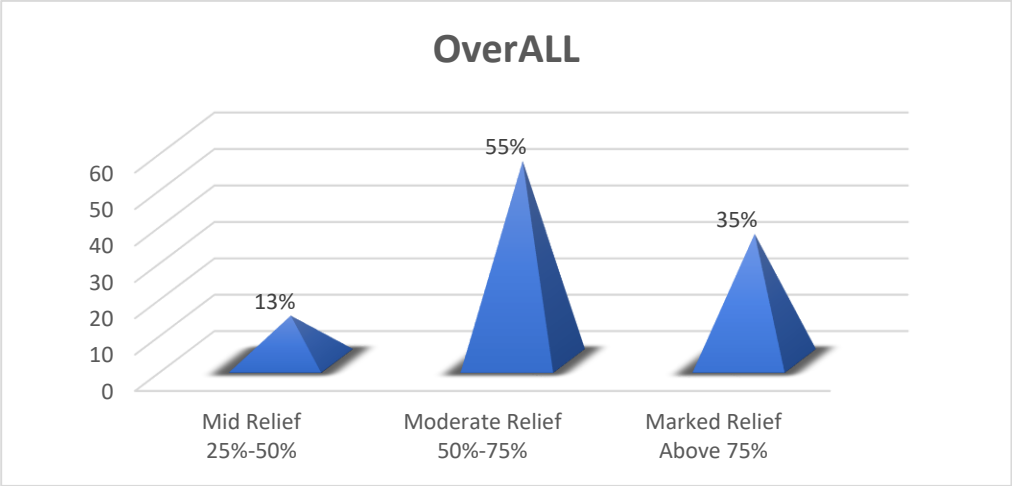
TABLE 11 –EFFECT OF THERAPY ON PARAMETERS WISE:

S.NO	PARAMETERS	% of relief AT
1	BMI	50%
2	HAIRFALL	44.44%
3	DRYNESS OF SKIN	65.85%
4	CONSTIPATION	78.05%
5	LOSS OF APPETITE	82.61%
6	PUFFINESS OF FACE	69.86%
7	T3	50%
8	T4	55.56%
9	TSH	76.6%
10	MENSTRUAL DISTURBANCE	69.23%

Table no-12 Distribution by Overall Assessment

	No.of Subjects	Total%
Mild Relief (25% - 50%)	5	12.5
Moderate Relief (50%-75%)	22	55
Marked Relief (Above 75%)	14	35.0
Total	40	100.0

GRAPH NO. 01 Distribution by Overall Assessment



In this study out of 40 subjects, 22 subjects (50%-75%) had Moderate relief, 14 subjects (Above75%) had Marked relief and 5 subjects (25%-50%) had Mild relief.

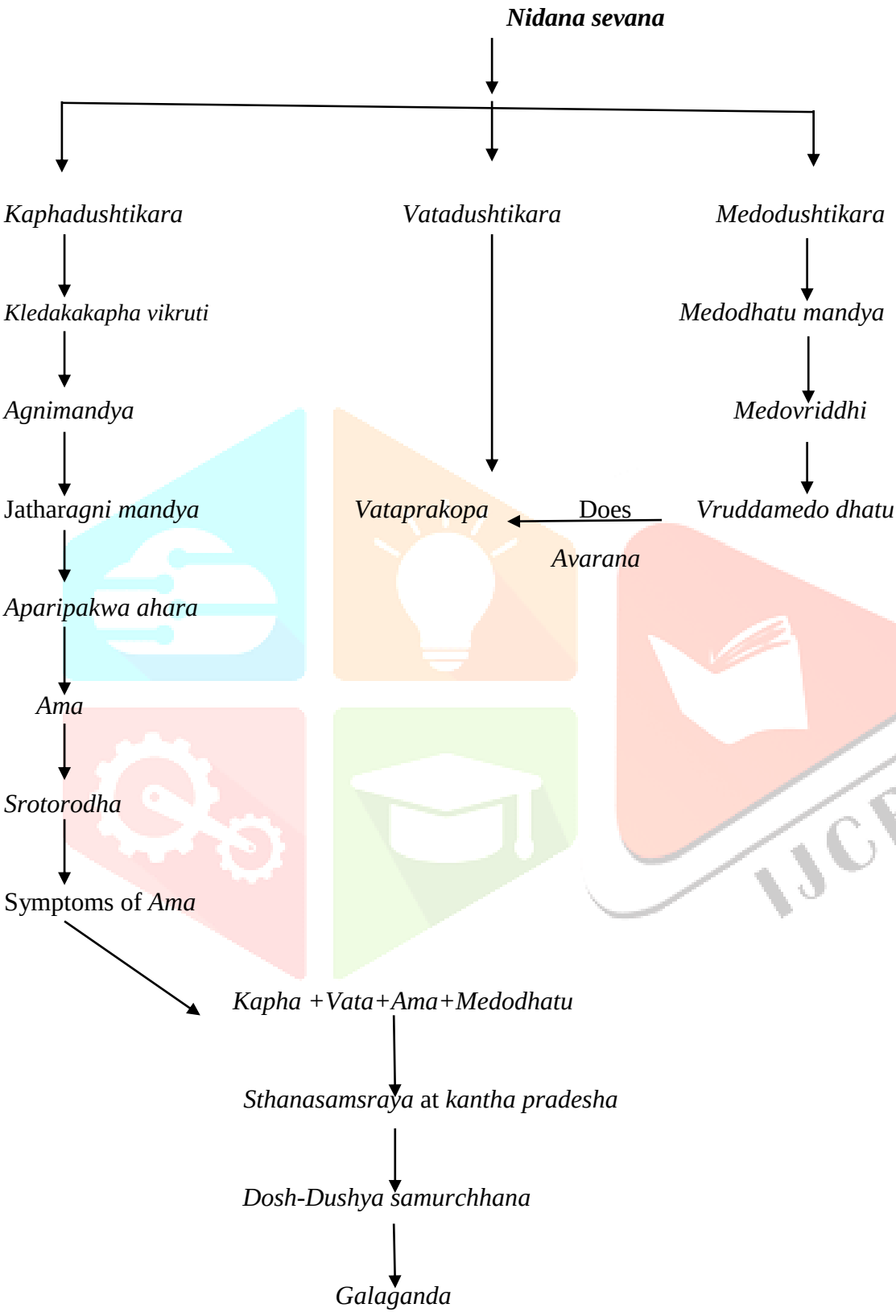
DISCUSSION

Interpretation of the role of *Srotas* in Hypothyroidism

Mandagni at *Rasa Dhatu* results in *Aruchi, Gaurava, Tandra, Angamarda, Pandutva, Klaibya, Sroto Rodha* and *Saada*. This can be understood by signs and symptoms like loss of appetite, Tiredness, Anaemia, Fluid retention, Loss of libido, Increased somnolence and Puffiness of face. *Mandagni* at *Rakta dhatu* results in *Twak vikara, Shwitra* and *Vyanga*. This can be understood by dry, coarse skin, vitiligo and hyperpigmentation of face. *Mandagni* at *Mamsa* Dhatu results in manifestation of *Galaganda* and *Gandamala*. This can be interpreted with different types of Goiter. *Mandagni* at *Medo Dhatu* results in *Sthoulya* and *Shwasa* with *Alpa Cheshta* observed as weight gain and dyspnoea in Hypothyroidism. *Mandagni* at *Asthi Dhatu* results in manifestation of *Kesha-Dosha, Nakha Dosha* and *Asthi bheda* observed as hair loss and brittle nails in Hypothyroidism. *Mandagni* at *Majja Dhatu* results in manifestation of *Parva-ruk* observed as Arthralgia in Hypothyroidism.*Mandagni* at *Shukra Dhatu* results in *Klaibya, Aharshana,*

Garbha Pata and *Garbha Strava* observed as loss of libido, erectile dysfunction and infertility in Hypothyroidism.

Samprapti* of *Galaganda



DISCUSSION ON RESULTS:

Effect of therapy on Hair fall:

The therapy provided 44.44% relief in Hair fall.

There was a statistically Highly significant ($p<0.0000$) difference on dryness of skin after *Ubhaya shodhana*. At the end of therapy, it was reduced in all 21 subjects. Hair fall may be due to Asthi dhatu dusti. Kesha is mala of *Asthi dhatu*. *Uttarottara dhatu poshana* got hampered so this symptom can be exhibited. *Trikatu churna, Madana phala*di yoga and *Trivrit lehya* contains *ushna, teekshna, deepana, pachana* drugs which helps in breakdown of *samprapti* and makes channels clear from Rasa dhatu onwards- nourishes *uttarottara dhatu*- relieves symptoms.

Effect of therapy on Dryness of skin:

The therapy provided 65.85% relief in Dryness of skin.

There was statistically Highly significant($p<0.0000$) difference on dryness of skin after *Ubhaya shodhana*. At the end of *Shodhan*, it was reduced in all 25 subjects. Rasa *dhatvagni mandya* (ama present in Rasavaha srotas) produces vitiated rasa dhatu which leads to improper Nutrition to Rakta (blood) and coarseness of skin. Ama present in Rasavaha, Medovaha and Swedavaha srotas obstructs dhatu vyapar impairs preenana to skin. Vitiated vata causes dryness of skin.

Breakdown samprapti- Drugs with *Deepana, pachana, ushana, tiksha, Srotoshodhaka* clears ama present in Rasavahadi srotas. They remove obstruction in *Rasavahadi srotas* and *Swedavaha srotas*. This reduces dryness of skin.

Effect of therapy on Constipation:

The therapy provided 78.05% relief in constipation.

There was a statistically Highly significant($p<0.0000$) difference on constipation after *Ubhaya shodhana*. At the end of therapy, it was absent in all the 26 subjects. Deficiency of Thyroid hormones results in intestinal hypo-motility due to Sluggish colon contractions and fluid retention. Here, *Samana* and *Apana vata* get hampered along with *Anna grahana, Pachana, vivechana* and *Nishkramana karmas*. *Ubhaya shodhana* helped in breakdown of *Samprapti*.

Effect of therapy on Loss of appetitie:

The therapy provided 82.61% relief in loss of appetitie.

There was statistically Highly significant($p<0.000$) difference on loss of appetite after *Ubhaya shodhana*. At the end of therapy, it was improved in all 18 subjects.

Hypofunctioning of *Jatharagni* produces Ama responsible for *Jatharagni* and *Dhatvagni mandya*. It is due to imbalance in the gut Thyroid axis which resulted in decreased secretion of gut enzymes namely Ghrelin

and Cholecystokinin. Alleviation of this symptom achieved by *deepana, pachana* properties of drugs under trial.

Effect of therapy on Puffiness of face:

The therapy provided 63.16% relief in puffiness of face.

There was a statistically Highly significant($p<0.000$) difference on Puffiness of face after the *Ubhaya shodhana*. At the end of the therapy, it was absent in all 21 subjects.

Puffiness of face is caused due to accumulation of hyaluronic acid in tissues. *Vruddhi* of *kledaka Kapha* along with accumulation of ama and increase of Jala *tatwa* in body causes puffy appearance. The *ushna, tikshna, shothahara* and *srotoshodhaka* properties of the trial drug helps in reducing *Jala tatwa, kledata* and relieves from this symptom.

Effect of therapy on Increased body weight:

The therapy provided 50% relief in Increased body weight.

There was statistically Highly significant($p<0.000$) difference on BMI after Ubhaya *shodhana*. At the end of therapy, it was absent in all 20 subjects.

In this condition, *Kapha* dusti along with *Rasa dhatwagni, Medo dhatawagni-mandya* cause accumulation of *Abadha meda* in Body leads to *Sthoulya*. As it is *Bahudosha avastha vikara -Ubhaya shodhana* eliminates doshas and help in reduction of Body weight.

Effect of therapy on Menstrual disturbance:

The therapy provided 69.23% relief in Menstrual disurbance.

There was statistically Statistically significant ($p<0.002$) difference on Menstrual disurbance after *Ubhaya shodhana*. At the end of therapy, it was absent in all 12 subjects.

Due to hypofunctioning of *Agni*, rasa vriddhi occurs which is in asthayi (unstable) form. This vitiated dhatu unable to nourish *updhatu artava* (Menstrual flow) and *stanya* (Breast milk) properly. Vitiated doshas causes *artava vaha srotodushti* and obstruction in *srotas* results in *anartava* (Amenorrhoea).

Effect of therapy on T3:

The therapy provided 50 % relief in T3. There is a statistically significant difference in level of Serum T3 after therapy (P Value < 0.002).

Both Vamana and *virechana* drugs with *ushna, teekshna* and *vyavayi guna* helped *Agni deepana* and removing *avarana*.

Effect of therapy on T4:

The therapy provided 55.56 % relief in T4. There is a statistically significant difference in the level of Serum T4 after therapy P Value <(p<0.025).

Thyroxine is eventually converted into tri-iodothyronine in tissues. Here ubhaya *shodhana* found to be effective in raising levels of thyroxine. It indicates that both drugs have action over Thyroid gland. Their action can be interpreted at the level of thyroglobulin molecules within Thyroid glandular cells where the production of thyroxine hormone occurs. The first step in the production of thyroxine is the conversion of ingested iodide to iodine which is carried out by the enzyme peroxidase. If peroxidase is blocked, then this step will not occur and thyroxine will not be produced. Here enzyme peroxidase can be understood as a component of *Agni*. Ubhaya shuddhi drugs help in removing blockage due to *Kapha-hara Swabhava* and *Agni* Deepana. The release of thyroxine into blood stream is carried out by cleavage of thyroglobulin by protease enzyme. If these enzymes are absent or deficient, then thyroxine will not be be released into the blood stream. It can be understood that both drugs helped in cleavage of thyroxine from thyroglobulin into blood stream because of their *Ushna, Teekshna* and *Vyavayi Swabhava.*

Effect of therapy on T.S.H: The therapy provided 76.6 % relief in TSH.

There was a statistically Highly significant difference in level of TSH after therapy. (p<0.000) Vamana and *virechana* helped in increasing production and proper release of Thyroid hormones through activation of metabolic enzymes namely peroxidase. TSH level was reduced due to negative feedback mechanism through Hypothalamo-Pituitary Thyroid axis.

CONCLUSION

- There is no direct reference of Hypothyroidism in Ayurveda but can be correlate with *Kapha nanatmaja vikara, Agni Vikruti, Galaganda, Rasapradoshaja vikara* etc. In modern treatment modalities, not satisfactory effective medicine proved so far. It's high time to come up with effective treatment from Ayurvedic point of view as incidence is increasing day by day and people seek ayurvedic treatment for such chronic diseases.
- *Vamanapurvak Virechana karma* selected for *Shodhana* indicated in *Bahudoshavastha janita vikaras.* Thyroid gland is situated in neck region which is *Kapha Dosha Sthana. Kapha* dominant symptoms are present in this disease. Thus, for elimination of *Kapha Dosha, Vamana Karma* is indicated. *Virechana* does systemic *shodhana* of *kapha* in moderate degree and also accelerates *vatanulomana*.
- Grading of *Ubhaya-shuddhi* has correlation and association on relief of subjective and objective parameters which was assessed by Pearson chi square test.
- In present study, *Ubhaya shodhana* showed significant result in most of the parameters. Being a multipurpose therapy, *Vamana* and *Virechana* eliminates vitiated *kapha*, regulates pitta and does *vatanulomana*. It reduces *dravata* of *pitta* and *guruta* of *kapha*. Decrease of *Prithvi* and *Aap mahabhuta* eventually increase of *Agneya tatva*. Thus, *Shodhan* helps in potentiating *agni* in systemetic manner.

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