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MANAGEMENT OF HYPOTHYROIDISM WITH AYUGMA ARGWADADHI KASHAYABASTI, BASELINE PACHANA AND GUDA HARITAKI RASAYANA-A CASE SERIES STUDY

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ABSTRACT

Hypothyroidism[1], inadequate production of thyroid hormone, is due to modern,western lifestyle, is the commonest endocrine disorders worldwide. affects on metabolism and dysfunction in multiple systems, has similarity with Tridoshaja agnimandhya resulting in formation of ama leading to bahudosha lakshanas[2], vitiation of vata and kapha resulting in jataragnimandhyata and dhatwagnimandhya at rasavaha, raktavaha, mamsavaha, medovaha, asthivaha, shukravaha and manovaha srotas. Management of Hypothyroidism with modern drugs may bring value of TSH and T4 to normal range but Increased dosage and continuous medication are expensive and make patient drug dependent for rest of life and now it is demand of time to treat the condition through ayurveda. Where this case is treated with shodhana and rasayana with an objective to assess the efficacy of shodhana and rasayana in hypothyroidism. In this case series study, an attempt is made to study the efficacy of baseline pachana with gomutra mandura capsule and argwadadhi kashaya as anupana, ayugma aragwadadhi kashaya basti and guda haritaki rasayana in reducing TSH value in hypothyroidism cases. Thyroid function tests are assessed before and after the treatment. In theses cases very encouraging results were reported. All the four cases showed significant changes in both subjective and objective parameters. During

follow up of patients, no any abnormality was reported. This treatment protocol can be adapted in hypothyroidism w.s.r kaphavataja Vikara in routine ayurvedic practice.

KEYWORDS: Hypothyroidism, Vyadhisankara, Samprapti vighatana, Deepana-pachana, shodhana. Rasyana.

INTRODUCTION

Todays technical era where there is more of sedentary life style and stress along with this urbanization is affecting quality of food and health. This is leading to many lifestyle disorders and hormonal imbalances in body. Thyroid is gland secrets T3 and T4 hormones regulated by TSH which is secreted by pituitary gland. These two hormones have two major effects on body i.e to increase overall metabolic rate in the body and to stimulate growth in the children. Hypothyroidism is one among the most prevelant endocrine disorder in india. The highest prevalence[3]of hypothyroidism is(13.1%) noted in people aged 46-54 years old, with people aged 18-35 years being less affected (7.5%). 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. Clinical features of hypothyroidism has close similarity with kapha vata pradhana Tridoshaja agnimandhya vikara resulting in formation of ama leading to bahudosha lakshanas, vitiation of vata and kapha resulting in jataragnimandhyata and dhatwagnimandhya at rasavaha, raktavaha, mamsavaha, medovaha, ashthivaha manovaha srotas.

MATERIALS AND METHODS

The patient was presented with complaints of klama, angamarda, menstrual abnormality, hair fall etc were examined, and then evaluation done with the help of thyroid function tests.after confirmation patient having elevated TSH levels and normal or reduced T3,T4,FT3,FT4 levels are enrolled for this case series. Laboratory investigations like Hb% and objective parameters like weight, body mass index were also documented.an informed and written consent was taken from the patient before the commencement of treatment. Paient outcomes were also analysed.

Case report -1(COPD NO-19159, DOPD NO-6216)

A female patient of 23 years visited Kayachikitsa opd of taranath government ayurvedic medical college and hospital, Ballari presented with chief complaints of weight gain, Hair fall, Swarabheda, Arohana ayasa, Swelling around neck, Atinidra, Bhaya, Chittodvega,

krodha, avasada, Dourbalya, tandra, klama since 15 days. Patient was non diabetic, with good physical built and had family history of her mother having hypothyroidism. Her appetite was reduced with occasional constipated bowel. She had regular menstrual history(3-4 days of flow/25-28 days). On the basis of patients complaints, endocrinological investigation i.e thyroid function test was advised. TFT's shows TSH:76.085micro IU/ml,FT3: 2.05 pg/ml, FT4:0.58ng/ml.on the basis of TFT results and complaints patient was diagnosed as hypothyroidism.

Case report-2(COPD NO-6580, DOPD NO-1842)

A female patient of 22 years visited Kayachikitsa opd of taranath government ayurvedic medical college and hospital, ballari. Patient(c/o galashotha) was diagnosed with hypothyroidism at the age of 14 years and was on thyroxine for 4 years after 4 years she stopped using medication for 1 year, again in 2021 she started developing complaints like galashotha, irregular menstruation, hairfall weight gain so investigated with TFT and result showed raised TSH level, started using homeopathy medication and followe for 2 year but no significant result was found so she stopped using medication.in 2024 feb she visited Kayachikitsa opd TGAMC ballari presented with chief complaints of galashotha, menstrual irregualation(2-3 days of flow/above 45 days), hairfall, weight gain, klama. Patient was non diabetic, non hypertensive with good physical built and no family history of hypothyroidism. Her appetite was good. On the basis of patients complaints, endocrinological investigation i.e thyroid function test was advised. TFT's shows TSH:69.27micro IU/ml,FT3: 2.32 pg/ml,FT4:0.47ng/ml.

Case report-3(COPD NO-5278, DOPD NO-1198)

A female patient aged about 24 years visited kayachikitsa opd of TGAMC and H ballari. presented with **chief complaints of** weight gain, hair fall, swarabheda, arohana ayasa, swelling around neck, blackish discoration around neck, atinidra, bhaya, chittodvega, krodha, avasada dourbalya, loss of appetite, tandra, klama, since 15 days.patient was non diabetic, with good physical built and no family history. her appetite was reduced with constipated bowel. she had regular menstrual history(1-2 days of flow(scanty flow)/25-28 days).on the basis of patients complaints, endocrinological investigation i.e thyroid function test was advised. TFT's shows TSH:65.023micro IU/ml,FT3: 2.80 pg/ml,FT4:0.56ng/ml.on the basis of TFT results and complaints patient was diagnosed as hypothyroidism.

Case Report-4(COPD NO-5391, DOPD NO-1470)

A female patient aged about 46 years visited kayachikitsa opd of TGAMC and H ballari. presented with **chief complaints of** weight gain, hair fall, dourbalya, loss of appetite, tandra, klama, since 5 months. Patient was non diabetic, non hypertensive but having HBsAg positive with good physical built and no family history. her appetite was reduced with constipated bowel. She had attained menopause 3 years ago.on the basis of patients complaints, endocrinological investigation i.e thyroid function test was advised.TFT's shows TSH:25.74micro IU/ml,FT3: 2.87 pg/ml,FT4:0.88ng/ml.on the basis of TFT results and complaints patient was diagnosed as hypothyroidism.

INTERVENTION

Patient is administered with

1) Cap Gomutra manduram[4] **for 63 days as a baseline pachana**

Dose: 500mg twice a day/Before Food

Anupana: Aragwadadhi Kashaya[5] **(15ml twice a day/before food)**

2). Ayugma aragwadadhi kashaya basti

a) 1st sitting: 1 course of ayugma Kashaya basti with aragwadadhi kashaya for 7 days-

Basti parihara kala 14 days

b) 2nd sitting: 2nd course of basti for again 7 days

Basti parihara kala 14 days

3) Rasayana for 21 days(43rd day to 63rd day) guda haritaki lehya prayoga[6]

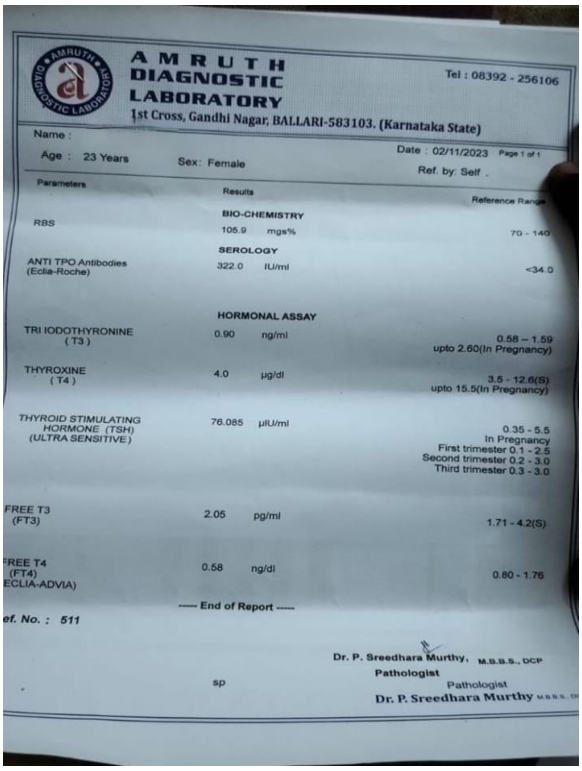
Dose: 10gm twice a day/before food anupana: ushnajala

Total duration of treatment 63 days

OBSERVATION AND RESULTS

	Subject 1		**Subject 2**		**Subject 3**		**Subject 4**	
observations	BT	AT	BT	AT	BT	AT	BT	AT
TSH(micro IU/ml0	76.085	5.64	69.27	5.078	65.023	8.284	25.74	9.706
FT3(pg/ml)	2.05	2.97	2.32	3.15	2.80	3.12	2.87	2.90
FT4(ng/ml)	0.58	0.83	0.47	1.22	0.56	0.88	0.88	0.93
Weight	65kg	60kg	60kg	58kg	65kg	60kg	81kg	78kg
BMI	25.9	23.9	23.42	22.7	34.21	31.57	31.6	30.1

REPORTS OF SUBJECT 1, BEFORE TREATMENT-AFTER TREATMENT -TFT REPORTS



AMRUTH DIAGNOSTIC LABORATORY
1st Cross, Gandhi Nagar, BALLARI-583103. (Karnataka State)
Tel : 08392 - 256106

Name :
Age : 23 Years Sex : Female
Date : 02/11/2023 Page 1 of 1
Ref. by: Self .

Parameters	Results		Reference Range
	BIO-CHEMISTRY		
RBS	105.9	mgs%	70 - 140
	SEROLOGY		
ANTI TPO Antibodies (Eclia-Roche)	322.0	IU/ml	<34.0
	HORMONAL ASSAY		
TRI IODOTHYRONINE (T3)	0.90	ng/ml	0.58 – 1.59 upto 2.60(In Pregnancy)
THYROXINE (T4)	4.0	µg/dl	3.5 - 12.6(S) upto 15.5(In Pregnancy)
THYROID STIMULATING HORMONE (TSH) (ULTRA SENSITIVE)	76.085	µIU/ml	0.35 - 5.5 In Pregnancy First trimester 0.1 - 2.5 Second trimester 0.2 - 3.0 Third trimester 0.3 - 3.0
FREE T3 (FT3)	2.05	pg/ml	1.71 - 4.2(S)
FREE T4 (FT4) (ECLIA-ADVIA)	0.58	ng/dl	0.80 - 1.76

----- End of Report -----

Ref. No. : 511

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AMRUTH DIAGNOSTIC LABORATORY
1st Cross, Gandhi Nagar, BALLARI-583103. (Karnataka State)
Tel : 08392 - 256106

Name :
Age : 24 Years Sex : Female
Date : 26/02/2024 Page 1 of 1
Ref. by: Self .

Parameters	Results		Reference Range
	HAEMATOLOGY		
HB%	13.5	Gms%	M:13-18, F:11.5-16
	BIO-CHEMISTRY		
RBS	91.9	mgs%	70 - 140
	HORMONAL ASSAY		
FREE T3 (FT3)	2.97	pg/ml	1.71 - 4.2(S)
FREE T4 (FT4)	0.83	ng/dl	0.80 - 1.76
THYROID STIMULATING HORMONE (TSH) (ULTRA SENSITIVE) (ECLIA-ADVIA)	5.64	µIU/ml	0.35 - 5.5 In Pregnancy First trimester 0.1 - 2.5 Second trimester 0.2 - 3.0 Third trimester 0.3 - 3.0

----- End of Report -----

Ref. No. : 305

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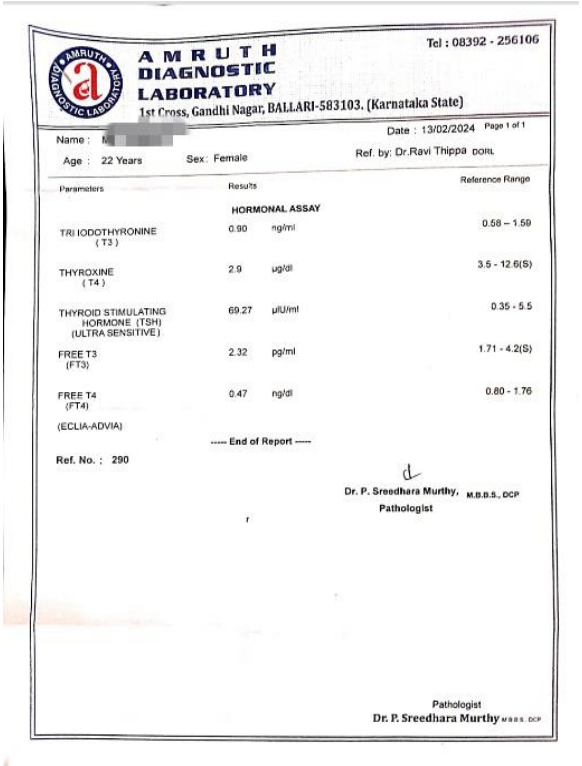
Dr. P. Sreedhara Murthy M.B.B.S., DCP

REPORTS OF SUBJECT 2,BEFORE TREATMENT-AFTER TREATMENT -TFT REPORTS



AMRUTH DIAGNOSTIC LABORATORY
1st Cross, Gandhi Nagar, BALLARI-583103. (Karnataka State)
Tel : 08392 - 256106

Name : [redacted]
Age : 22 Years Sex : Female
Date : 13/02/2024 Page 1 of 1
Ref. by: Dr.Ravi Thippa DORL

Parameters	Results		Reference Range
	HORMONAL ASSAY		
TRI IODOTHYRONINE (T3)	0.90	ng/ml	0.58 – 1.59
THYROXINE (T4)	2.9	µg/dl	3.5 - 12.6(S)
THYROID STIMULATING HORMONE (TSH) (ULTRA SENSITIVE)	69.27	µIU/ml	0.35 - 5.5
FREE T3 (FT3)	2.32	pg/ml	1.71 - 4.2(S)
FREE T4 (FT4) (ECLIA-ADVIA)	0.47	ng/dl	0.80 - 1.76

----- End of Report -----

Ref. No. : 290

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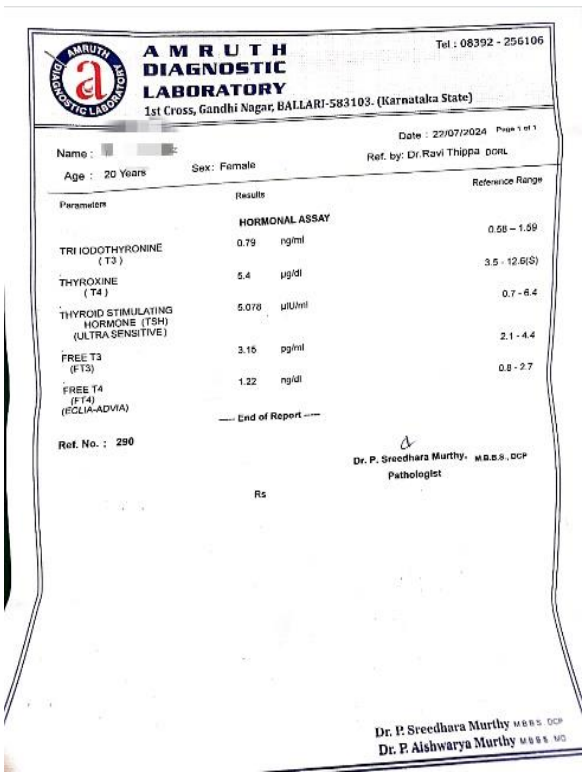
Pathologist

Pathologist
Dr. P. Sreedhara Murthy M.B.B.S., DCP



AMRUTH DIAGNOSTIC LABORATORY
1st Cross, Gandhi Nagar, BALLARI-583103. (Karnataka State)
Tel : 08392 - 256106

Name : [redacted]
Age : 20 Years Sex : Female
Date : 22/07/2024 Page 1 of 1
Ref. by: Dr.Ravi Thippa DORL

Parameters	Results		Reference Range
	HORMONAL ASSAY		
TRI IODOTHYRONINE (T3)	0.79	ng/ml	0.58 – 1.59
THYROXINE (T4)	5.4	µg/dl	3.5 - 12.6(S)
THYROID STIMULATING HORMONE (TSH) (ULTRA SENSITIVE)	5.078	µIU/ml	0.7 - 6.4
FREE T3 (FT3)	3.15	pg/ml	2.1 - 4.4
FREE T4 (FT4) (ECLIA-ADVIA)	1.22	ng/dl	0.8 - 2.7

---- End of Report ----

Ref. No. : 290

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Pathologist

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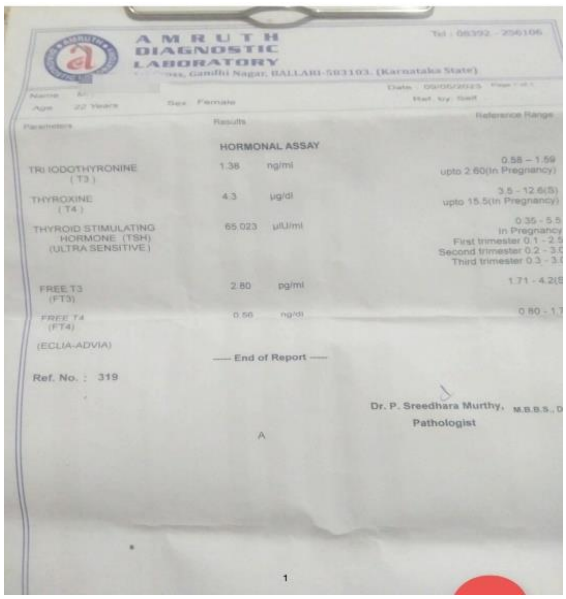
Dr. P. Aishwarya Murthy M.B.B.S. MD

REPORTS OF SUBJECT 3, BEFORE TREATMENT-AFTER TREATMENT -TFT REPORTS



AMRUTH DIAGNOSTIC LABORATORY
1st Cross, Gandhi Nagar, BALLARI-583103. (Karnataka State)
Tel : 08392 - 256106

Name : [redacted]
Age : 23 Years Sex : Female
Date : 19/06/2023
Ref. by: Dr.Madhav Diggavi M.D (Ayur)

Parameters	Results	Reference Range
HORMONAL ASSAY		
TRI IODOTHYRONINE (T3)	1.08 ng/ml	0.58 – 1.59 upto 2.60(In Pregnancy)
THYROXINE (T4)	7.8 µg/dl	3.5 - 12.6(S) upto 15.5(In Pregnancy)
THYROID STIMULATING HORMONE (TSH) (ULTRA SENSITIVE)	8.284 µIU/ml	0.35 - 5.5 In Pregnancy First trimester 0.1 - 2.5 Second trimester 0.2 - 3.0 Third trimester 0.3 - 3.0
FREE T3 (FT3)	3.12 pg/ml	1.71 - 4.2(S)
FREE T4 (FT4) (ECLIA-ADVIA)	0.88 ng/dl	0.80 - 1.76

—— End of Report ——

Ref. No. : 288

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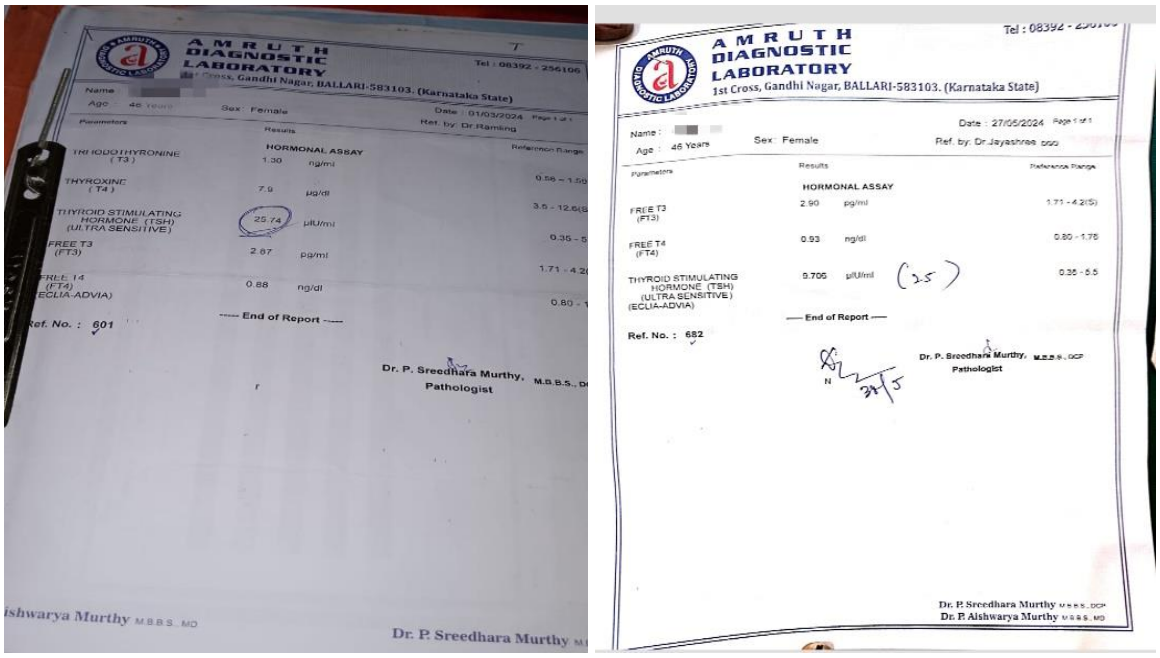
Pathologist

REPORTS OF SUBJECT 4, BEFORE TREATMENT-AFTER TREATMENT -TFT REPORTS



AMRUTH DIAGNOSTIC LABORATORY
1st Cross, Gandhi Nagar, BALLARI-583103. (Karnataka State)
Tel : 08392 - 256106

Name : [redacted]
Age : 46 Years Sex : Female
Date : 27/05/2024
Ref. by: Dr.Jayashree DGO

Parameters	Results	Reference Range
HORMONAL ASSAY		
FREE T3 (FT3)	2.90 pg/ml	1.71 - 4.2(S)
FREE T4 (FT4)	0.93 ng/dl	0.80 - 1.76
THYROID STIMULATING HORMONE (TSH) (ULTRA SENSITIVE) (ECLIA-ADVIA)	9.706 µIU/ml (3.5)	0.35 - 5.5

—— End of Report ——

Ref. No. : 682

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DISCUSSION

Hypothyroidism in ayurveda can be understood as kapha vata pradhana Vyadhi where jataragnimandhya, dhatwagnimandhya(mainly) is seen which is making dusti of different dhatu predominantly rasa and medas. Hence chikitsa should be focused on ama pachana and agnideepana at the level of kayaagni and dhatwagni followed by srotoshodhana and rasayana

To carry out the therapeutic Maneuver, ayugma aragwadhadi Kashaya basti, cap gomutra mandura, aragwadhadi kashaya and guda haritaki rasayana have been tried to have a check on the diseased condition.most of the drugs in these formulations have Deepana, pachana, ushna, teekshna, Sukshma, lekhana qualities which pep-up body metabolism. They also have vatakaphahara, dhatwagni Deepana, amapachana, medohara, avaranaghna effects.

GOMUTRA MANDURA

Content of gomutra mandura such as shunti, pippali, haritaki, vibhitaki, amalaki have predominantly katu(pungent), tikta(bitter)rasa, laghu, ruksha, teekshna guna, ushna veerya and katu vipaka. Tikta rasa has lekhana guna that scrapes out excessicive kapha and meda from srotas.katu rasa increases vata and pitta while stimulates the digestive fire.it removes the obstruction and thus corrects the srotorodha. Hence, it is apparent that by their rasa, these drugs are likely to have kaphasamaka and medohara properties.

Teeksha guna acts on the channels immediately and removes the obstruction.these guna also activate the jatharagni and dhatwagni and maintain their normal physiological status. Ushna veerya is accountable for increasing the basal metabolic rate and oxygen consumption and accelerates the breakdown of fat at mitochondrial level. The majority of the drugs have katu vipaka which enhances the jataragni and dhatwagni and normalizes the metabolic processes. katu vipaka drugs reduce the kapha and meda contents of the body.

Gomutra mandura contains Deepana, pachana Dravya, which regularizes gastric ph through their ushna and teekshna guna and ushna veerya helps in clearing srotorodha. So improvement in metabolism and digestion leads to proper dhatu poshana. Mandura is a natural source of iron.it has got raktavriddhikara property. The iron fraction of mandura provides optimum amount of iron which is required for normal erythropoiesis. Amalaki is richest source of vitamin c which helps in absorption of iron. Mandura helps in iron-sulphur cluster formation which is essential for thyroid hormone synthesis, madura with its antioxidant property reduces lipid peroxidation thus reduces oxidative stress. immunomodulation property of mandura helps in regulating thyroid autoantibodies. triphala is rasayana with its antioxidant property it reduces the oxidative stress by neutralizing free radicals, by reducing lipid peroxidation, by enhancing antioxidant defense, by modulating immune response, by reducing inflammation it enhances thyroid gland function and trikatu has Deepana, pachana properties. Trikatu with its digestive enzyme stimulation property enhances protein digestion, essential for thyroid hormone production. With its bioavailability

enhancement property it improves absorption of thyroid hormone and nutrients. With its anti-inflammatory effect reduces inflammation. Antioxidant activity of trikatu reduces oxidative stress, protecting thyroid tissue, with its immunomodulation activity regulates immune response thus reducing autoimmune thyroiditis. Gomutra mandura gets potentiated due to presence of gomutra, which has therapeutic attribute like panduhara, shothahara, krimihara and Deepana. Thus it is capable of executing sampraptivighatana of hypothyroidism at various levels. Apart from this it is also possess rasayana property and has got vyadhipratyanika effect on hypothyroidism.

ARAGWADHADI KASHAYA

Ingredients of aragwadhadi gana mainly possessing kaphahara, vishhara and pramehahara properties. It has rechana, srotoshodhana, vatanuloma effect.it is mainly indicated in kapha dominant vyadhis owing to its anti-inflammatory, antihyperlipidemic properties.

Ingredients of aragwadhadi gana does the Deepana, pachana at different levels of agni thus help in breaking the samprapti vighatana[7]

	Deepana	Pachana
At jataragni level	Patola, chitraka	Kutaja, aragwadha
At bhutagni level	kantakari	Karanja, chitraka
At rasagni level		Chitraka, kiratatikta, kutaja
At raktagni level	Guduchi, putikaranja	Guduchi, nimba, patola, karavella
At mamsagni level	Guduchi	
At asthyagni and majjagni		Guduchi

Patala, kiratatikta, saireyaka, karanja, chirabilwa, karavella of arawadadhi gana Kashaya due to its antiiflammatory properties helps in reducing inflammation of thyroid gland which caused due to autoimmune pathology of hypothyroidism which in turn help in samptivighatana meva chikitsa. Krimighna properties of aragwadha, nimba, amrita, murva, kantakari, patha, kiratatikta, chirabilwa, saptaparna, chitraka, karavella, puga of aragwadadhi gana kashya help in eliminating intestinal parasites, reduces oxidative stress and inflammation, modulate immune response which in turn help in reducing autoimmune thyroiditis which one of the most common pathology of hypothyroidism thus stimulates the thyroid hormone production. There is increased oxidative stress in hypothyroidism causes thyroid tissue damage and impair thyroid hormone production so the free radical scavenger action of indrava, amrita, kantakari, chiktra neutralizes reactive oxygen species thus reduces oxidative stress and corrects thyroid tissue damage, modulate immune response, enhances antioxidant defence which in turn improve the thyroid hormone production.

GUDA HARITAKI RASAYANA

Haritaki is having dosanulomana, Deepana, poustika, buddhiindriyabalapradha, sarvarogap rasamana properties. Haritaki being a rasayana drug regulates the dhatudushti and promotes anabolism of healthy dhatu. guda haritaki with its Deepana pachana property regularizes the gastric ph through its ushna veerya which also helps in clearing srotorodha.so improvement in digestion and metabolism leads to proper dhatu poshana.

There is an affinity between chebupentol, an alkoid found in terminalia chebula and cholecystokinin(cck) a digestive hormone which is abundantly found in gastro-intestinal tract. The receptors of cck are found in brain tissue and also present in thyroid tissue. There is formation of or the attachment of cck+chebupentol with neurotransmitter which stimulate the hypothalamus or the pituitary gland to reduce or enhance the activity of both hypothalamus or pituitary and in response, influence the activity of thyroid gland.

Table no. 02: Relationship among cck, haritaki and thyroid tissue.[8]

CCK	Chebupentol(haritaki)	Thyroid tissue
Digestive hormone abundantly found in G.I tract	Compound in terminalia chebula picked up by cck(lipophilic)	presence of cck receptors in thyroid tissue (which picks up digestive hormone, helps in synthesis of T3 and T4)

Chebupentol(alkaloid) found in haritaki is lipophilic. It has got affinity to medaj dhatu and neutralizes the vriddha meda due to its increasing power of digestion over the medo dhatu. thus, normalizing the basic metabolism of the body and helps in reducing symtoms like vibhanda, klama, tandra and sthoulya. purana guda provides essential minerals (e.g. iodine, selenium) which are essential of thyroid function thus enhances thyroid hormone production.

Basti has a profound impact on the enteric nervous system and hypothalamic-pituitary-tyroid axis.

Influence on enteric nervous system

Basti enhances communication between ENS and CNS, it does the Neurotransmitter regulation: modulates serotonin, dopamine and acetylcholine, regulates peristalsis, reducing symtoms like vibhanda, Soothes gut lining, reducing inflammation.

Influence on Hypothalamic-pituitary-thyroid (HPT) axis

Stress response modulation: Reduces cortisol, promoting thyroid balance.

Hormone balance: Regulates insulin, adrenaline and other hormones.

Neuroplasticity: Enhances adaptability, reducing inflammation. Thus, help in thyroid hormone regulation.

Vagus nerve stimulation: Basti activates vagus nerve, influencing ENS and HPT.

Gut-hypothalamus-axis: Basti modulates gut-derived signals to hypothalamus.

It does Neuroimmune modulation and balances immune response, reducing inflammation

Though vasti is administered in the pakwashaya, it has action throughout the body, properly given basti, remains in the pakwashya sroni, and below nabhi and through srotas, the veerya of basti Dravya is spread to the entire body. Similarly, though basti remains in the body only for a short time and it is secreted along with mala by the action of apana vayu, Due to veerya, the dosha/morbid factors situated from head to foot are also thrown out of the body. According to acharya Sushrut, it is like the sun which though situated light years away, due to teekshna, ushna Prabhava absorbs the rasa of Prithvi. Basti has two actions, nourishing the body and expelling doshas. First, the potency of basti Dravya get absorbed does its systemic action.its second major action is related with the facilitation of excreting morbid substances responsible for disease process into colon, from where they are evacuated. moreover, the following factors of physico-chemical nature help in its absorption. Differences in concenteration and therefore of the diffusion pressure between crystalloids in the blood and in the intestinal lumen. The osmotic pressure of the plasma proteins in excess of the hydrostatic pressure of the capillary blood pressure is an important factor in attracting water and crystalloids into the blood stream. absorption varies directly with the intra-intestinal pressure.the absorption rate increases with increase in intra-intestinal pressure. Electrical forces in the form of cataphoresis play an important role.

From these two explanations, it is clear that niruha basti does its karma by elimination not by absorption. Expulsion of morbid materials clears the srotas and improves nourishment to cell and stimulate body’s own repair mechanism.

Basti therapy is recommended for the treatment of numerous physical and psychological conditions. Immunomodulation was observed following Basti, according to a study that evaluated the metabolic and immunologic response to basti therapy.one potential mechanism by which it operates is by modulating T cells, immunoglobulins, and proinflammatory mediators.

Basti leads to kapha shodhana and vatanulomanan. srotoshuddhi helps in removing avarana from receptors which helps in proper functioning of them and improve metabolism.

DISCUSSION ON OBJECTIVE PARAMETERS

TSH: Basti along with baseline pachana with gomutra mandura and aragwadhadi kashya as anupana with its teekshna, ushna, Deepana, pachana, srotoshodhana, kaphavata hara property helped in increasing production and proper release of thyroid hormones through activation of metabolic enzymes namely peroxidase in addition to this that rasayana property of guda haritaki targeted on the vide samprapti ghatakas is having TSH decreasing effect and T3 increasing effect.

FT3: Hypothyroidism is characterized by low FT3 levels with reduced conversion of T4 to T3 leading to low FT3 levels. Basti with its shodhana property eliminates the ama which is hindering the thyroid function.it mainly act at cellular level and enhances cellular cleansing thus it increases the conversion of T4 to T3 with enhancing thyroid hormone receptor sensitivity. Teekshna, ushna guna and srtotoshodhana property of formulation used for treating subjects helps in removing avarana.

FT4: Hypothyroidism is characterized by low levels of thyroxine. Thyroxine is eventually converted into tri-iodo thyronine in tissue. 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 the 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. Basti, gomutra mandura, guda haritaki avalehya with its srotoshodhana guna. kaphavata hara property helps in removing the blockage and does agnideepana. The release of thyroxine into blood stream is carried out by cleavage of thyroglobulin by protease enzyme. If these enzyme are absent or because of deficiency of these enzyme, thyroxine will not be released into blood stream.gomutra mandura, aragwadadhi Kashaya, guda haritaki avalehya with its ushna, teekshna, vyavayi guna and kaphavatahara property help in cleavage of thyroxine from thyroglobulin into blood streams.

BMI: Body composition and thyroid hormones appear to be closely related. Thyroid hormones regulate basal metabolism, thermogenesis and play an important role in lipid and glucose metabolism, food intake and fat oxidation. Thyroid dysfunction is associated with changes in body weight and composition. Recent data have also disclosed a relation between

obesity and thyroid autoimmunity with the adipocyte hormone leptin appearing to be the key factor linking these two conditions. Kayagni or Pachakagni (digestive fire) contributes its moieties to the Dhatu or Dhatwagni dealing with tissue metabolism. Ama (undigested toxic substance) which results from hypofunctioning of Jatharagni, leading to Srotorodha, which in turn increases Medodushti and decreases the nutrient supply to subsequent Dhatus namely Asthi (bone tissue), Majja (bone marrow), and Shukra promoting substance. By consuming, gomutra mandura, aragwadhadi Kashaya with its ushna, teekshna property improves the Pachakagni and dhatwagni thereby help for poshana and controls obesity. basti is effective in the management of obesity due to a reduction in the E. coli colonization, after basti by correcting gut flora dysbiosis. Mandura and haritaki with its lekhana property helped in reducing the BMI.

CONCLUSION

Ayurvedic drugs, skilled vaidya abd Samhita based, evidence based clinical practice are key to clinical practice. Shodhana by Basti helps in converting dysbiotic state of intestinal flora into symbiotic state. Here the case series presented,4 subjects suffering from hypothyroidism, successfully treated by ayurvedic treatment modality.

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