



Case Study

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A CASE STUDY ON THE EFFICACY OF VAMANA KARMA IN HYPOTHYROIDISM

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ABSTRACT

Hormonal diseases are encroaching the charts day by day. The growing graph of the incidences of thyroid disorder has always been a matter of concern and challenge to the medical field. Despite achieving innumerable breakthroughs in the management of thyroid illness, a lack of risk-free issues regarding the safety and effectiveness of the medicines have always hindered the advancement of the treatment. Hence, the accelerating demand to treat hypothyroid cases by adopting the Ayurveda system of medicine is ardently focused. The study's main aim is to manage thyroid without hormonal therapy with reduced risk factors and detrimental effects. Methods: A single case study on Hypothyroidism was undertaken to seek Ayurveda intervention in the successive management, including dietary alterations and follow-up. Treatment had been initiated with Deepana-Pachana (appetizer and digestant drugs), snehapana internal administration of lipids, followed by shodhana karma (purificatory therapy) and samasarjana karma (a specific diet regimen following the detoxification/purificatory procedure). After the treatment, the present work proves to be constructive as the clinical outcome suffices the study's objective, reducing the signs and symptoms and relieving the patient.

Keywords: Hormonal diseases, thyroid disorder, Hypothyroidism, intervention

INTRODUCTION

The thyroid is an endocrine gland responsible mainly for maintaining a normal basal metabolic rate of the body. The thyroid gland is a bi-lobed structure connected by an isthmus, which is present below and anterior to the larynx. The gland develops from an evagination of the developing pharyngeal epithelium that descends to its normal position in the anterior neck¹. This pattern of descent explains the occasional presence of thyroid tissue in atypical locations such as the base of the tongue. The thyroid comprises follicles lined by low cuboidal-to-columnar epithelium filled with thyroglobulin-rich colloid. In response to TSH released by thyrotropes in the anterior pituitary, the follicular epithelial cells (which secrete thyroid hormone) of the thyroid pinocytose colloid and ultimately convert thyroglobulin into thyroxine (T₄) and lesser amounts of triiodothyronine (T₃). T₄ and T₃ are released into the systemic circulation, reversibly bound to circulating plasma proteins for transport to peripheral tissues. The unbound T₃ and T₄ interact with intracellular receptors to ultimately up-regulate carbohydrate and lipid catabolism and stimulate protein synthesis in a wide range of cells².

The net effect of these processes is an increase in the basal metabolic rate. The thyroid gland also contains a population of parafollicular C-cells that synthesize and secrete the hormone calcitonin. This hormone promotes calcium absorption by the skeletal system and inhibits the resorption of bone by osteoclasts. Diseases of the thyroid include conditions associated with excessive release of thyroid hormones (hyperthyroidism), those

associated with thyroid hormone deficiency (Hypothyroidism), and mass lesions of the thyroid³.

There is negative feedback of thyroid hormone on the pituitary, so when plasma concentrations of T₄ and T₃ are raised (hyperthyroidism), TSH secretion is suppressed, and conversely, when concentrations of T₄ and T₃ are decreased (primary Hypothyroidism), TSH level is elevated.

MATERIALS AND METHODS

A 26-year-old lady presented with an itching sensation all over the body, dry skin, swelling in the eyes, rashes in the extremities, paleness, muscular cramps and discoloration in the nails in the Out-patient department of Shri D. G. Melmalagi Ayurvedic Medical College and Hospital, Gadag, Karnataka, India, (OPD no. 18749) and Reg.no. 5610). The duration of occurrence of these symptoms was between 3-5 days. Cold intolerance and hair loss were remarkably present. A history of undue weight loss, prolonged fever, and starvation due to long-standing fast were noted. The involvement of the case subject was prolonged, and inactivity and lethargy were observed. Longer menstruation with heavier flow on the first 2 days and 5th and 6th day was also observed. There were muscular cramps with more intensity than the previous cycle. On investigation, the WBC levels were elevated to 17,000/mm³. Further investigation of the thyroid suggested low T₃ and TSH levels. The T₄ levels were considerably normal. Notably, while taking a family history, there was no previous case of any hormonal disorder present.

Table 1: Examination Findings^{4,5}

Skin examination	Dry and course, itching sensation, rashes present, pale and dry face.
Pulse	Bradycardia (58-60 beats per minute) present.
Eyes examination	Inflammation (pre-orbital) present.
Reflex examination	Hypo-reflexia (e.g., plantar reflex absent.)

Table 2: Details of the Vamana karma procedure administered to the patient.

Duration	Procedure	Medicated substances used
Five days	Deepana and pachana (appetizer and digestant drugs)	Chitrakadvati (250 mg tid after food), warm water
Six days	Snehapana (internal administration of lipids) 30 ml-1 st day, 60 ml-2 nd day, 90 ml-3 rd day, 120 ml-4 th day, 150 ml- 5 th day, 180 ml-6 th day	Pachatikta Guggulu ghrita, warm water
Three days	Abhyanga and swedana (massaging of oils and body heating)	Murchitatilaitaila
One day	Vishramakaala (resting phase)	Kapha vardhaka ahara sevana (milk, curd rice, ice cream, sweets, bakery confectionaries)
Next day (early morning)	Vamana karma (medicated emesis procedure)	A combination of Madanaphala Pippali soaked in Yashtimadhu Phanta overnight and given along with madhu and saindhava lavana. After this, about 2 litres of cow's milk was given.
---	Vamana karma (medicated emesis procedure)	Eight times the vomiting urge took place and stopped naturally.
Four days	Samsarjana karma (a specific diet regimen following the detoxification /purificatory procedure)	Three meals of Peya (liquid gruel), three meals of vilepi (rice paste), Three meals of akrtā yusha (vegetable soup without ghee or oil), Three meals of krtā yusha (vegetable soup with ghee or oil)

OBSERVATION AND RESULTS

Table 3: T3, T4, and TSH values at different intervals.

Duration	T3	T4	TSH
Before Vamana karma (medicated emesis procedure)	56.99 ng/dl	9.9 ng/dl	0.154 micronIU/dl
After Vamana karma (medicated emesis procedure)	144.25 ng/dl	10.5 ng/dl	0.679 micronIU/dl
Follow-up 3 months	Kanchanaara Guggulu Shigru kwatha 1-0-1, 250 mg, after food 15-0-15 ml, after food.		
After 3 months of follow-up	92.0 ng/dl	7.21 ng/dl	3.17 micronIU/ml

Table 4: Examination findings after treatment.

Skin examination	Skin pores appear to be enlarged; the skin was smooth in texture. The itching sensation and rashes disappeared. Paleness of face reduced. The skin of the face seemed slightly oiled.
Pulse	72-75 beats per minute present.
Eyes examination	Inflammation (pre-orbital) is not present anymore.
Reflex examination	Hypo-reflexia absent (e.g., plantar reflex normal- toes down-going))

chabi.com : Thyrocare Technologies Limited

Reg. No : 5610. Reg. Date : 04/07/20

Name : ██████████ 25 Years, Female, Place: GADAG.

Ref. by : SELF.

T3 : 56.99 70 - 204 ngm/dl
T4 : 9.9 4.5 - 15 microgm/dl
T.S.H. : 0.154 0.400 - 6.160 µIU/dl

Method : ENZYME LINKED FLUOROSCENT ASSAY(ELFA)

Disorder	TSH	T4	T3	FT4
Primary Hypothyroidism	Y	B	N or B	B
Transient neonatal hypothyroidism	Y	B	B	B
Hashimoto Thyroiditis Hypothyroidism	Y	N or B	N or B	N or B
Grave's Disease	B	Y	Y	Y
Neonatal Grave's Disease	B	B	B	B
TSH deficiency	N or B	B	B	B
Thyroid Dishormonogenesis	Y	N or Y	Y	Y
Thyroid Hormone Resistance	Y	Y	Y	Y
TSH - Dependent Hypothyroidism	N	V	V	N
T4 Protein - Binding abnormalities	V	N or B	B	V
Nonthyroidal illness	Y or B	Y or B	Y or B	Y or B
Subacute Thyroiditis	Y or B	Y or B	Y or B	Y or B

Note : Y - Increased B - Decreased N - Normal, V - Variable

Thanks for reference,

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MBBS DCP
Consultant Pathologist.

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M.G. Circle, Pala Bedari Road, Gadag - 582101 Tel. : (08372) 250210, 250211, 250212 e-mail: gscgadag@gmail.com www.gadagscancentre.com

Reg. No : 5610. Reg. Date : 04/07/20

Name : ██████████ 25 Years, Female, Place: GADAG.

Ref. by : SELF.

Complete Blood Count

ERYTHROCYTES :
Haemoglobin : 12.0 gms% 11.5 - 16 gm%
R.B.C Count : 4.00 millions/mm3 3.7 - 4.8 millions/cumm
P.C.V. : 36.5% 35 - 46 %

LEUKOCYTES :
Total W.B.C Count : 17,300 cells/cumm 4000 - 11,000 cells/cmm

DIFFERENTIAL COUNTS:

Neutrophils : 80 % 40 - 75 %
Lymphocytes : 13 % 25 - 45 %
Eosinophils : 02 % 01 - 05 %
Monocytes : 05 % 02 - 08 %
Basophils : 00 % 00 - 02 %

PLATELETS :
Platelet Count : 3.91 lakhs/mm3 1.50 - 4.00 Lakhs/cumm

IMPRESSION : Neutrophilic leucocytosis

Thanks for reference,

DR. BIDARAGADDI. N.B.
MBBS DCP
Consultant Pathologist,

Reg. No : 6889. Reg. Date : 30/07/2014

Gadag Scan Centre

SHRI D.G. MELMALAGI AYURVEDIC MEDICAL COLLEGE & HOSPITAL, GADAG
Dr. S.V. Savadi road, GADAG-582103

Pt. Name : [REDACTED]
Age : 254 sex F Date 30/7/13
Ref. by Dr. R.V. Shetty I.P.D/O.P.D. No. [REDACTED]

LABORATORY REPORT

HAEMOTOLOGY	NORMAL VALUES	URINE
HB% 12.0 G/dl	M-13.5 to 18 G/dl	U. Sugar
T.L.C. 6,900 Cells/cumm	4000 to 10000 cells/cumm	U. Albumin
D.L.C. P 69 %	45 to 65%	Bile Salt
L 31 %	20 to 30%	Bile Pig
E 0H %	00 to 06%	Micro
M - %	00 to 01%	
B - %	00 to 01%	
ESR - MM/1ST hour	0 to 15 mm/1st hour	
RBC 4.7 millions/cumm	4.5 to 6.5 million/cumm	
PLT 4.8 Lac/cumm	1.5 to 3.5 Lac/cumm	
HCT 40.8 %	36 to 48%	
MCV 86.1 f	80 to 99fl	
MCH 87.5 pg	26 to 32pg	U. Pregnancy
MCHC 31.6 g/dl	32 to 36g/dl	
AEC - cells/cumm	40 to 440 cells/cumm	Stool Micro
BT - Min's Sec's	1 to 5 min's	
CT - Min's Sec's	3 to 8 min's	
Widal-O- H	MP	RA Test
A(H)	VDRL	CRP Test
B(H)	Bi. Group	ASLO
	Rh. Factor	

HIV- I [REDACTED] II [REDACTED]
IF POSITIVE 1. Must be confirmed by western blot test
2. Get your partner blood examined for HIV.
HBs Ag - [REDACTED]

Reg. No : 6889. Reg. Date : 30/07/2014

Gadag Scan Centre

Name : [REDACTED] 25 Years, Female, Place: GADAG.
Ref. by : DR. SHETTAR R.V. MD (Ayu)

T3 : 144.25 70 - 204 ngm/dl
T4 : 10.5 4.5 - 15 microgm/dl
T.S.H. : 0.679 0.400 - 6.160 µIU/dl

Method : ENZYME LINKED FLUOROSCENT ASSAY (ELFA)

Disorder	TSH	T4	T3	FT4
Primary Hypothyroidism	Y	B	N or B	B
Transient neonatalhypothyroidism	Y	B	B	B
Hashimoto Thyroiditis Hypothyroidism	Y	N or B	N or B	N or B
Grave's Disease	B	Y	Y	Y
Neonatal Grave's Disease	B	Y	Y	Y
TSH deficiency	N or B	B	B	B
Thyroid Dishormonogenesis	Y	B	B	B
Thyroid Hormone Resistance	Y	N or Y	Y	Y
TSH - Dependent Hypothyroidism	Y	V	V	N
T4 Protein - Binding abnormalities	N	V	V	V
Nonthyroidal illness	V	N or B	B	V
Subacute Thyroiditis	Y or B	Y or B	Y or B	Y or B

Note : Y- Increased B- Decreased N- Normal. V- Variable

Thanks for reference,
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Thyrocare
World's largest thyroid testing laboratory
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Thyrocare Technologies Limited
D-371, TIC MIDC, Turbhe, Navi Mumbai - 400702. Ph. : 022 - 309 0000 / 2762 2762 / 41 25 25 25
Fax : 2768 2409. Email : info@thyrocare.com Website : www.thyrocare.com

REPORT

NAME : [REDACTED] (25Y/F)
REF. BY : SELF
TESTS ASKED : T3, T4, TSH

SAMPLE COLLECTED AT:
1ST FLOOR DESAI COMPLEX J.T. MATH ROAD,
DISTRICT GADAG, KARNATAKA - 582101

TEST NAME	METHOD	VALUE	UNITS	REFERENCE RANGE
TOTAL TRIIODOTHYRONINE (T3)	C.L.I.A	107	ng/dl	60 - 200
TOTAL THYROXINE (T4)	C.L.I.A	9.9	µg/dl	4.5 - 12.0
THYROID STIMULATING HORMONE (TSH)	C.L.I.A	1.14	µIU/ml	0.30 - 5.5

Comments: SUGGESTING THYRONORMALCY

Pregnancy reference ranges for TSH
1st Trimester : 0.30 - 4.50
2nd Trimester : 0.50 - 4.60
3rd Trimester : 0.80 - 5.20
Reference: National Health and Nutrition examination survey, J Clin Endocrinol Metab. 2002; 87:489

Please correlate with clinical conditions.

Technology
T3 - Competitive Chemi Luminescent Immuno Assay
T4 - Competitive Chemi Luminescent Immuno Assay
TSH - Ultra Sensitive Sandwich Chemi Luminescent Immuno Assay

Sample Collected on (SCT) : 12 Dec 2013 18:10
Sample Received on (SRT) : 14 Dec 2013 04:48
Report Released on (RRT) : 14 Dec 2013 06:02

Sample Type : SERUM
LABCODE : 131224363/KAR42
BARCODE : 26392131 / DPS

Dr. Suhas Sakhare MD
Dr. Caesar Sengupta MD

VER: 22022013

SUMUKH PRAYOGALAYA
Dr. Choukimath's Institute of Laboratory Sciences & Research Centre

Patient Name : [REDACTED], 26 Years, Female.
Reg Date : 25/06/2014. Reported On : 25/06/2014 23:22. Printed on : 25/06/2014.

Ref. By : C/o. Ziya Prayogalaya
Sample From : LAB
Lab. No: 15315.

Note : This Sample is Received From Outside.

THYROID FUNCTION TEST

Test	Result	Normal Ranges
T3 (Tri-iodothyronine)	:1.93 nmol/L	1.2 - 3.1 nmol/L
T4 (Thyroxine)	:92.48 nmol/L	66 - 181 nmol/L
T.S.H.	:1.20 µIU/ml	0.27 - 4.2 uIU/ml

Method : Electrochemiluminescence.
Instrument : cobas e 411 fully automated analyser.

Disorder	TSH	T4	T3	FT4
Primary Hypothyroidism	↑	↓	N or ↓	↓
Transient neonatalhypothyroidism	↑	↓	↓	↓
Hashimoto Thyroiditis Hypothyroidism	↑	N or ↓	N or ↓	N or ↓
Grave's Disease	↓	↑	↑	↑
Neonatal Grave's Disease	↓	↑	↑	↑
TSH deficiency	N or ↓	↓	↓	↓
Thyroid Dishormonogenesis	↑	↓	↓	↓
Thyroid Hormone Resistance	↑	↓	V	V N
TSH - Dependent Hypothyroidism	↑	N	↓	V
T4 Protein - Binding abnormalities	V	N or ↓	↓	V
Nonthyroidal illness	↑ or ↓	↑ or ↓	↑ or ↓	↑ or ↓
Subacute Thyroiditis	↑ or ↓	↑ or ↓	↑ or ↓	↑ or ↓

Note : ↑- Increased ↓- Decreased N- Normal. V- Variable

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SHRI D G M AYURVEDIC MEDICAL COLLEGE, HOSPITAL GADAG-582103				
Pl. NAME : ██████████		DATE : 06/09/2014		
REF BY : Dr R.V Shettar		REP ID : 6362		
AGE : 26	SEX : FEMALE	OPD NO: 18749	IPD NO: 0	
LABORATORY REPORT				
INVESTIGATIONS	RESULT	NORMAL VALUES		
HEMATOLOGY				
ESR	16	M.0-9 MM	F 0-20 MM	MM/1 hour
CBC				Gr %
HEAMOGLOBIN	12.0	11	18	Cells / Cumm
W.B.C	9300	5000	10000	
D.C		0	0	
POLY	53	60	70	%
LYM	38	25	40	%
EOSI	07	2	6	%
MON	02	2	6	%
R.B.C	4.51	4	5	Mills/Cumm
H.C.T	37.2	32	54	%
M.C.V	82.5	76	96	FL
M.C.H	26.6	26	36	PG
M.C.H.C	32.2	31	37	G/GL
PLEATLET	3.78	1.5	4	Lacs / Cmm

The reduction in the signs and symptoms began during the snehapana kala (internal administration of lipids) itself. Thyroid levels of the subject fell in the normal range after 20 days of treatment and continued to be so even after 3 months of follow-up.

DISCUSSION

The case study presented with itching sensation all over the body, dry skin, swelling in the eyes, rashes in the extremities, paleness, muscular cramps, discoloration in the nails, undue weight loss began to show significant improvement from the snehapanakala (internal administration of lipids) which continued for six days. Immediately after the Vamana karma (medical emesis), these signs and symptoms disappeared, gradually restoring the thyroid levels to a normal range. One should also be aware that hormonal cases may not have a specific cause. Sometimes, one's immune system may fail to fight back such hormonal disorders. In fact, according to Ayurveda⁶, the functioning of the thyroid is controlled by Pitta dosha (that governs body metabolism). All the metabolic actions carried out by the thyroid hormones are directly subjected to Pitta dosha (that which governs body metabolism). In the case of hypothyroidism, coating by the Kapha dosha (that which is responsible for binding/assimilation in the body) and medo dhatu (fat tissue) obstructs the cellular level functioning of Pitta dosha⁷ (that which governs body metabolism. Kanchanara Guggulu resolves the agnimandya (loss of appetite) and eliminates strotolepa (coating in the channels). Vamana shodhana kriya (medical emesis therapy) improves agni (appetite/heat energy). Vamaka dravya (emetic drugs) possess the properties like ushna (hot), tikshna (penetrating), sukshma (minute), vyavayi (diffusing rapidly) and vikasi (expanding sharply) with their swavirya (vascular path or sensory stimuli connected to the heart and brain). They move to hridaya (heart), and via dhamani (impulses by nerves or vascular path), they lead to micro and macro channels of the body and act over the vitiated complexes. The agneya guna (heat) liquefies the complexes, followed by the tikshna guna (penetrating), breaking them into several particles. The liquefied matter then glides via various unctuous channels towards the kustha (abdomen), enters the amashaya (lower gastro-intestinal tract) and then stimulated by Udana Vayu and has the dominance of Agni and Vayu mahabhuta, move in urdhavabhaga (related to ability of certain drugs that direct induce chemoreceptor trigger zone) and get expelled outside through buccal cavity⁸.

Probable mode of action and metabolism of Kanchanara Guggulu

- Drugs like Shunthi (*Zingiber officinale*) and Shigroo (*Moringa oleifera*) possess ruksha guna (rough/dry) that is useful in shotha (inflammation).
- Along with this, Shunthi (*Zingiber officinale*) acts as Kapha Vatahara, and laghu guna (lightness in quality) of Shigru does the sroto shodhana (cleansing of the channels).
- Varuni and Shigru possess katu vipaka (pungent taste conversion post digestion) and act as shothahara (anti-inflammatory). Shunthi (*Zingiber officinale*) possessing snigdha guna (unctuousness) will result in dhatu poshana (nourishment) and subsides Vata.

There is an understanding of the specific anti-inflammatory, antioxidant, and analgesic action of drugs like Kanchanara, Shunthi and Triphala (polyherbal medicine). Also, drugs like Shigru (moringa) and Varuni (colocynth) exhibit anti-inflammatory and antioxidant activity. Shigru (moringa) acts as an analgesic also.

Hence, understanding how the therapy works internally, and the medicinal treatment followed supports the system from having a downfall is noted in this case study where both Vamana karma (purificatory treatment) and Kanchanara Guggulu with Shigru Kwatha as shamana chikitsa (medicinal treatment) prove to be significantly effective and does not require assisted drug therapy.⁹⁻¹¹

CONCLUSION

In the present case study on Hypothyroidism, an endocrinal disorder occurring due to the hypo functioning of the thyroid gland, the applied shodhana chikitsa (purificatory treatment) followed by the shamana chikitsa (medicinal treatment) is evident in curbing the disorder without the aid of hormonal drug therapy. There is a satisfactory reduction in signs and symptoms and consistent maintenance of normal thyroid levels post-treatment. Currently, patients are administered with immediate use of hormone therapy in cases of Hypothyroidism in a blink of an eye. Such diseases could be curbed with a scientific-based, safer and better approach to the profound utility of Ayurvedic medicines and therapies like Vamana therapy (shodhana kriya).

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