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A Clinico Observational Study of *Gandamala* w.s.r Thyroid Disorders

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ABSTRACT

Thyroid problems are among the most common endocrine disorders presently seen worldwide.Thyroid hormone regulates the metabolic action of the body. Improper secretion of thyroid hormones by thyroid gland leads to thyroid disorders. *Gandamala* being one such disease having an eagle sight, one can conclude out that how modern era is influencing both body & mind status of the individual. Based on clinical features of *Gandamala* can be considered as thyroid disorder and is one among the *mamsapradoshaja vikara*. Hence in this study an attempt is made the observation of thyroid hormone changes in *Gandamala*. After the study it was observed that, T3 and FT3 were found raised in the clinically diagnosed cases of *Gandamala*. Thyroid function test with raised T3, FT3 and normal T4, TSH, FT4 can be considered as supportive diagnostic tool for *Gandamala.*

Key Words *Gandamala, Mamsadhatu, Thyroid disorders, Thyroid hormones*

INTRODUCTION

The changing life style of human being by means of nutritional and behavior pattern plays a major role in the manifestation of several disorders including Thyroid disorders. Thyroid diseases are one of the most common, yet misunderstood and overlooked conditions in Indians. It's estimated that in India, 42 million people have thyroid disease[1]. Worldwide about one billion people are estimated to be iodine deficient, 0.3 to 0.4% of population have overt and 4.3 to 8.5% have subclinical hypothyroidism per year. Grave's disease constitute about 50-80% of cases of Hyperthyroidism[2].Thyroiditis is a group of disorders that all cause inflammation of thyroid gland. Most types of thyroiditis are 3-5 times more likely to be found in women than in men, onset is 30-50 years of age[4]. Thyroid nodules are lumps which commonly arise within the thyroid gland. Around 4-6.5% of lumps are malignant and most thyroid nodules are benign colloidal nodules[5].

In *Ayurveda* the disorders of thyroid gland are explained under the heading of *Galagaṇḍa*. According to *charaka-Galaganda* is one and in the sides of pharynx whereas *Gandamala* is multinodular[6]. According to *Hemachandra*

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Galaganda is synonym of *Gandamala*[7], *Madhavakara* and *Yogaratnakara* said that *Gandamala* is the swelling in the neck and throat region. These swellings ripen slowly after long time of onset[8,] by considering *vyaktasthana* and incidence of the disease the present study is aimed to observe of Thyroid function test in clinically diagnosed cases of *Gandamala*.

AIMS AND OBJECTIVES

Evaluation of T3, T4, TSH, FT3 and FT4 in clinically diagnosed cases of *Gandamala*.

MATERIALS AND METHODS

Study design:

It is an observational clinical study on 30 patients of either sex diagnosed as *Gandamala* based on clinical features as mentioned in our classics selected from OPD & IPD of Shri J.G.C.H.SAyurvedic Medical College Hospital Ghataprabha. After that patients were subjected to thyroid function test for the evaluation of objective finding for *Gandamala.*

Inclusion criteria:

1. Patients with the BMI <18 and >23 will be selected.
2. Patients fulfilling the classical features of *Gandamala*.
3. Patients of either sex.
4. No age limitations.

Exclusion criteria:

1. Thyroid patients with metabolic disorders like Diabetes etc. will be excluded.

ASSESSMENT CRITERIA

Assessment will be done based on subjective and objective criteria.

Subjective criteria:

- *Nibaddhashwayathu*-The swelling adhering firmly in the throat,
- *MahaanvaHrisva*-Whether big or small in size,
- *Mushkavallambate gale*-Hangs loose like scrotum,
- *Jantorgaleanushabdha*- Second sound of voice,
- *Talugalaprashosha*-Dryness of the palate and throat,
- *Kandu*-Itching,
- *Toda*-Pricking pain.

Objective criteria:

- T_3, T_4, TSH, FT3 and FT4
- Patients with the BMI <18 and >24.9
- Other investigations if required

Duration of the study

Since this is an observational study patients will be kept under observation till the fulfilment of objectives.

OBSERVATION AND RESULTS

Total 30 patients were diagnosed as *Gandamala* for the study and they were subjected for thyroid function test and the results of observations are cited in below tables (1-7)

Overall assessment of subjective parameter

In the present study it was observed that among 30 patients 100% of patients were having *Nibaddhashwayathu* (*Mahan* 26.66%,*Hrusva* 73.33%), 73.33% were having *Talugalaprashosha* and *Kandu*, 53.33% were having *Toda*, 26.66%

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were having *Jantorgaleanushabdha* and 13.33%were having *Mushkavallambategale*.

Table 1 Overall assessment of subjective parameter in 30 patients

Subjective criteria	No. of patients	Percentage
Nibaddhashwayathu	30	100%
Mahan	8	26.66%
Hrusva	22	73.33%
Mushkavallambategale	4	13.33%
Jantorgaleanushabdha	8	26.66%
Talugalaprashosha	22	73.33%
Kandu	22	73.33%
Toda	16	53.33%

Critical analysis of subjective parameter

In the present study among 30 patients, 8 (26.66%) patients were diagnosed with *hrusvanibaddhashwayathu, talugalaprashosha, kandu* and *toda*. 14 (46.66%) patients were diagnosed with *hrusvanibaddhashwayathu, talugalaprashosha* and *kandu*. 4 (13.33%) patients were diagnosed with *mahannibaddhashwayathu, jantorgaleanushabdha* and *toda*. 4(13.33%) patients were diagnosed with *mahannibaddhashwayathu, Mushkavallambate gale, jantorgaleanusabdha and toda.*

Table 2 Critical analysis of subjective parameter in 30 patients

Critical analysis of subjective Parameter	No. of Patients	Percentage
Hrusvanibaddhashwayathu+talugalaprashosha+kandu+toda	8	26.66%
Hrusvanibaddhashwayathu+talugalaprashosha+kandu	14	46.66%
Mahannibaddhashwayath+jantorgaleanushabdha+toda	4	13.33%
Mahanibaddhashwayathu+Mushkavallambategale+jantorgaleanushabdha+toda	4	13.33%

Thyroid hormones level:

T3 level:

Among 30 patients 6 patients had T3 level in between 0.5-0.8nmol/L,11 patients 0.9-2.4nmol/L, 2 patients 2.5-6nmol/L, 11 patients above 6nmol/L.

Table 3 Distribution of patients according toT3 level (nmol/L)

T3 level	No. of patients
0.5-0.8	6
0.9-2.4	11
2.5-6	2
Above 6	11

T4 level:

Among 30 patients 15 patients had T4 level in between 1-8pmol/L, 2 patients 9-21pmol/L, 8 patients 22-40pmol/L, 5 patients above 40pmol/L.

Table 4 Distribution of patients according to T4 level (pmol/L)

T4 readings	No. of patients
1-8	15
9-21	2
22-40	8
>40	5

TSH level:

Among 30 patients 13 patients had TSH level in between 0-0.19mU/L, 10 patients 4.6-8mU/L, 7 patients above 8mU/L.

Table 5 Distribution of patients according to TSH level (mU/L)

TSH readings	No. of patients
0-0.19	13
0.2-4.5	0
4.6-8	10
>8	7

FT3 level:

Among 30 patients 13 patients had FT3 level in between 0.5-3.4pmol/L, 3 patients 7.9-12pmol/L, 14 patients above 12pmol/L.

Table 6 Distribution of patients according to FT3 level (pmol/L)

FT3 readings	No. of patients
0.5-3.4	13
3.5-7.8	0
7.9-12	3
>12	14

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FT4 level:

Among 30 patients 15patients had FT4 level in between 1-8pmol/L, 2 patients 9-25pmol/L, 9patients 26-40pmol/L, 4 patients above 40pmol/L.

Table 7 Distribution of patients according to FT4 level (pmol/L)

FT4 readings	No. of patients
1-8	15
9-25	2
26-40	9
>40	4

DISCUSSION

Thyroid problems are among the most common endocrine disorders presently seen worldwide in an about 42 million in India. Thyroid hormone regulates the metabolic action of the body. Improper secretion of thyroid hormones by thyroid gland leads to thyroid disorders. *Gandamala* is one among the *mamsapradoshajavikara*. It was observed that, all the 30 patients, patients had the *lakshana* of *Nibaddhashayathu*, constituting 100% of total incidence and their averageT3, T4, TSH, FT3, and FT4 level were 8.38nmol/L,19.14pmol/L, 4.28mU/L, 15.61pmol/L and 15.9pmol/L respectively. 4 patients had the *lakshana* of *Mushkavallambate gale* constituting 13.33% and their averageT3, T4, TSH, FT3, and FT4 were 1.43nmol/L, 5.25pmol/L, 0.02mU/L, 2.93pmol/L and 3.29pmol/L respectively. 8 patients had *lakshana* of *Jantrgaleanushabdha* constituting 26.66% of total incidence and their average T3, T4, TSH, FT3, and FT4 were 2.78nmol/L, 7.24pmol/L, 1.05mU/L, 3.9pmol/L and 6.28pmol/L respectively. 22 patients had *lakshana* of *Talugalaprashosha* constituting 73.33% of total incidence and their averageT3, T4, TSH, FT3, and FT4 were5.6nmol/L, 11.9pmol/L, 3.23mU/L, 11.9pmol/L, and 12.63pmol/L respectively. 22 patients had *lakshana* of *Kandu*, their averageT3, T4, TSH, FT3, and FT4 were 5.6nmol/L, 11.9pmol/L, 3.23mU/L, 11.95pmol/L and 12.63pmol/L respectively.16 patients had *lakshana* of *Toda*constituting 53.33% of total incidence and their average T3, T4, TSH, FT3, and FT4 were 2.78nmol/L, 7.24pmol/L, 1.05mU/L, 3.9pmol/L and 6.28pmol/L respectively.

CONCLUSION

Gandamala is *kaphapradhana, mamsapradoshaja* and metabolic disorder. Based on critical analysis of subjective parameters it can be concluded that *Hrusvanibaddhashwayathu, Talugalaprashosha, Kandu* and *Toda* can be considered as *Pratyatmalakshanas* of *Gandamala. Mushkavallambate gale* and *Jantorgaleanushabdha* can be considered as *Anubandhalakshanas* of *Gandamala*. This observational study shows that T3 and FT3 were found raised in the clinically diagnosed cases of *Gandamala*. Thyroid function test with raised T3, FT3 and normal T4, TSH, FT4 can be considered as supportive diagnostic tool for *Gandamala*. Based on above observations it can be concluded that *Gandamala* can be considered as Hyperthyroidism and Hashimoto's thyroiditis.

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