



A STUDY ON ASSESSMENT OF RISK FACTORS, COMPLICATIONS AND QUALITY OF LIFE OF PATIENTS WITH HYPOTHYROIDISM IN A TERTIARY CARE HOSPITAL

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ABSTRACT **Background:** Hypothyroidism is a syndrome which results from decreased production of thyroid hormones from thyroid gland and hence it can also be termed as underactive thyroid disease.

Objectives: To assess the quality of life in patients with denovo hypothyroidism. To assess risk factors, complications in patients with hypothyroidism.

Materials and methods: There was a total (N=100) number of participants enrolled in the study and are evaluated for risk factors and complications and among 100, 40 patients are Denovo hypothyroid who are assessed for quality of life. This is a prospective observational study in which the risk factors, complications and quality of life of patients is evaluated for those patients who are willing to give informed consent and meet the inclusion criteria.

Results and Discussion: Referring to the findings, the patients with high BMI, females and age around 20-30 are more prevalent. Patients who do not adhere to medications develop complications such as goiter and cvs problems but mostly obesity is seen and QOL of patients was studied using SF-36 and HADS scales. The initial mean was found to be less compared to the final mean in SF-36 whereas in HADS the initial mean is high compared to the final mean. The Patient's BMI was high initially and then reduced to normal. This implies that after educating the patient about the disease and need of medication the final result shows there is improvement in the patient's QOL. P values of SF 36 and HADS are 0.0001 and 0.0314 respectively, which by conventional criteria was found to be statistically significant.

Conclusion: This study simply showed that the females, patients with high BMI and age around 20-30 are the major risk factors. Proper patient education, care and medication adherence are the cornerstones to help avoid complications and improve patients quality of life.

KEYWORDS : Hypothyroidism, Underactive thyroid disease, Risk factors, Complications and Quality of life.

INTRODUCTION:

Hypothyroidism refers to a clinical state which results from decreased production of thyroid hormones and is usually manifested by a reversible but at times (infants) an irreversible retardation of all body functions.

- Hypothyroidism can occur very rarely from tissue resistance.
- Hypothyroidism is a common endocrine disorder which mostly affects women than men comparatively.

Review of literature:

The beneficial effects of L-thyroxine on cardiovascular risk factors, endothelial function, and quality of life in subclinical hypothyroidism: randomized, crossover trail. Salman Razvi, Lorna Ingoe, Gill Kekka, Crispian Oates, Carolyn McMillan, Jolanta U Weaver. Studies have concluded that subjects treated with L-thyroxine leads to improvement in quality of life and significant improvement in cardiovascular risk factors. The reduction in cardiovascular risk factors directly related to the increased level of achieved free T₄ concentration. It also improved symptoms of tiredness.

Spectrum of quality of life impairment in hypothyroidism.

R.Jaeschke, G.Guyatt, D.Cook, S.Harper and H. et.al. Studies have concluded that the symptoms attributed to hypothyroidism are resolved and improved with treatment. These were measured with the help of questionnaires distributed through family physicians, endocrinologists, and regional branches of thyroid foundation.

Health-related quality of life in patients with thyroid disorders.

G.P. Bianchi, V.Zaccheroni, E.Solaroli, et.al. Studies are based on Short-Form 36 and Nottingham Health Profile Questionnaires, concluded that all domains in SF-36 were reduced in thyroid disease except bodily pains. The domains of NHP are less severely affected. HRQL was also impaired in the absence of altered hormone levels. In

large proportions of patients mood/behavior disturbances were present.

AIMS AND OBJECTIVES

Aim:

- The aim of this study is to assess risk factors, complications of hypothyroid patients and to improve the quality of life of patients with denovo hypothyroid patients in tertiary care hospitals.

OBJECTIVES:

- To assess risk factors, complications in patients with hypothyroidism.
- To improve the quality of life in patients with denovo hypothyroidism.

Need of study:

- To create awareness among patients suffering from hypothyroidism since early diagnosis and treatment remain the cornerstone of the management.
- To provide patient centered care.

MATERIALS AND METHODS

- In this prospective and observational study, we identified risk factors, complications of patients with hypothyroidism from an existing database of 100 hypothyroid patients being followed up at the Medicity medical center, Hyderabad. And among 100 patients, 40 Denovo hypothyroid patients are selected for QOL study.

Participants are selected based on the following criteria:

- (1) Age above 10 and below 80,
- (2) Both males and females,
- (3) Patients with primary and secondary hypothyroidism involving in lifelong thyroid hormone replacement therapy,
- (4) Patients with cardiac dysfunction due to hypothyroidism,
- (5) Patients with hypothyroidism due to hyperthyroidism treatment and
- (6) Hypothyroid patients who are willing to participate in our study.

- HADS and SF36 rating scales are used to assess the patients quality of life. Written informed consent form was taken from the patients.

Study design:

A cohort (prospective observational) descriptive study will be undertaken to evaluate the risk factors, complications and quality of life among patients with hypothyroidism in a medical centre.

Sample size:

100 patients, evaluated at one point analysis to study risk factors, complications of patients with hypothyroidism.

Among 100 patients 40 are diagnosed with Denovo hypothyroidism and hence QOL is collected from patients with Denovo hypothyroidism.

Study site:

Medicity hospital, Medchal.

Study period:

6 months (September 2019 - February 2020)

STUDY CRITERIA:

Inclusion criteria-

- Age between 10-80 years.
- Both females and males.
- Patients with primary and secondary hypothyroidism involved in lifelong thyroid hormone replacement therapy.
- Patients with cardiac dysfunction due to hypothyroidism.
- Patients with hypothyroidism due to hyperthyroidism treatment.
- Hypothyroid patients who are willing to participate in our study.

EXCLUSION CRITERIA-

- Patients with hypothyroid during pregnancy.
- Patients infertility treatment.
- Breast feeding women. Patients who are not involved in lifelong thyroid hormone replacement.
- Primary hypothyroidism due to parasite infection and de Quervain's thyroiditis.
- Patients who are not willing to participate.

Sources of study: Data collection form (patient profile sheet).

Statistical analysis: It includes the description of quantitative variables as mean, description of quantitative variables as number (N) and percentage. Paired t test is used to compare two population means where two samples in which observations in one sample can be paired with observations in the other sample. P-value <0.05 was considered significant and P<0.001 was highly significant.

RESULTS AND DISCUSSION:

- The collected information interprets data regarding distribution of hypothyroid patients based on gender which shows that the female patients are highly prone to hypothyroidism.
- The collected data depicts the information regarding distribution of hypothyroid patients based on age which reveals that the incidence rate of hypothyroidism in age groups 20-30, 30-40 and 40-50 was found to be high (that is 31%, 23% and 17% respectively).
- The collected data represents the distribution of hypothyroid patients based on complications which shows that most of patients (n=24) with hypothyroidism were found to have developed obesity as a complication (47.1%).
- The collected information interprets that the hypothyroid patients with normal weight (n=34) was found to be high (56.66%) which indicates that the patients adhere to medications hence normal BMI
- Impression the denovo hypothyroid patients quality of life using SF36 scale (N=40), the denovo hypothyroid patients final mean was found to be increased when compared to the initial mean which implies that there is improvement in the QOL of the patients. P value and statistical significance was calculated and the two-tailed P value was found to be less than 0.0001 at 95% confidence interval. By conventional criteria, this difference is considered to be extremely statistically significant.

(Source :<https://clinmedjournals.org/articles/jmdt/jmdt-2-023-figure-1.pdf>)

Impression : fig 2 depicts the information regarding the denovo hypothyroid patients quality of life using HADS scale (N=40), the denovo hypothyroid patients final mean was to be decreased compared to the initial mean which indicates that the depression and anxiety symptoms were reduced and thereby improving the patients QOL. P value and statistical significance was calculated and the two-tailed P value was found to be 0.0314 at 95% confidence interval. By conventional criteria, this difference is considered to be statistically significant.

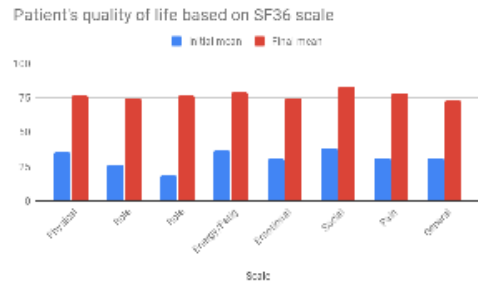


Fig.1 : Comparison of denovo hypothyroid patients initial and final quality of life using SF36 scale (N=40)

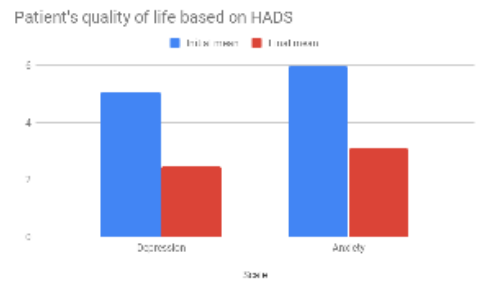


Fig.2 : Comparison of denovo hypothyroid patients initial and final quality of life using HADS

(Source: [https://www.svri.org/sites/default/files/ attachments/2016-01-13/HADS.pdf](https://www.svri.org/sites/default/files/attachments/2016-01-13/HADS.pdf))

Interprets data regarding denovo hypothyroid patients quality of life using BMI graph, the initial results states that the denovo hypothyroid patients are more in overweight (16) category whereas final results states that the patients are high in normal weight (15) category which implies that the BMI values decrease till they reach normal weight upon regular medication and care and hence QOL of denovo thyroid patients is increased.

CONCLUSION :

Hypothyroidism is a chronic condition with timely diagnosis, along with correct treatment can go a long way towards reducing the morbidity, mortality and mortality associated with disease state. Patients with high BMI, females and age around 20-30 were found to be more prone to hypothyroidism. Patients who does not stick to medication chart or who are non adherent to medication develop complications such as goiter and other CVS related but mostly obesity is seen and QOL of patients was studied using SF36 and HADS scales which showed that the initial mean was found to be less compared to final mean in SF36 whereas in HADS the initial mean is high compared to final mean. Patients BMI is high initially and then reduced to normal. This implies that after educating the patient about the disease and need of medication the final result shows there is improvement in the patients QOL. P values of SF-36 and HADS are 0.0001 and 0.0314 respectively, which by conventional criteria was found to be statistically significant.

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