



EPIDEMIOLOGY AND PREVALENCE OF THYROID CANCERS IN TAMIL NADU

General Surgery

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ABSTRACT

Introduction Thyroid cancer is a heterogeneous disease that affects all age groups. The tumors are found to be more aggressive in the elderly. The distribution of these cancers in India continues to remain uncertain. The impact of geographic locations in the incidence of thyroid malignancies is yet to be explored. This study was done to estimate the prevalence and distribution of thyroid cancers.

Methodology This hospital based retrospective study was done at the Department of Surgery of our medical college hospital. About 50 medical records of patients diagnosed with thyroid cancers at our hospital were analyzed. Data on clinical examination, ultrasound findings and histopathology findings were documented.

Results The average age of prevalence of thyroid cancers in males and female is males 59.4 years and female 38.8 years. In this study the peak prevalence cases were found in papillary thyroid, in male out of 5 cases 3 cases were present and in female out of 45 cases 36 cases were present.

Conclusion The need for effective population based screening programmes to detect thyroid cancers is the well elucidated in this study.

KEYWORDS

Differentiated Cancers, Histopathology, Papillary Carcinoma, Thyroid Cancers,

INTRODUCTION

Thyroid cancers are one of the most common endocrine malignancies worldwide. These malignancies are unique in terms of their diversity, presentation and behavior. Though the mortality rates of thyroid cancers are unalarming, they pose a significant morbidity in terms of endocrine abnormalities, disability and quality of life. They are relatively rare tumors, however, their incidence is gradually rising. The increase in the detection of thyroid cancers could be due to routine head and neck evaluations, and improved diagnostic facilities and investigatory procedures.

Thyroid cancer is a heterogeneous disease that affects all age groups. The tumors are found to be more aggressive in the elderly. According to the National Cancer Registry Program (NCRP) of the Indian Council of Medical Research (ICMR) thyroid cancers were attributed to 1.87% of all the cancers between 1984 and 1993.[<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3169866/>] Among the various thyroid cancers, papillary cancers are most common, followed by follicular type.

Management of thyroid cancers continues to be a challenge, in the light of survival rates. Anaplastic thyroid carcinoma remains one of the most difficult human malignancies to treat and is highly lethal. Undifferentiated thyroid cancers continue to have a dismal prognosis. Controversy still exists over the treatment of this cancer because of the long term survival of patients with differentiated thyroid cancers, irrespective of the type or extent of treatment. A high index of suspicion is required for the diagnosis of these cancers.

Thyroid cancer prevalence varies widely and depends on many factors including the method of detection. Among all the types, papillary microcarcinomas are common in autopsy specimens. Despite the increasing prevalence, mortality from thyroid cancer remains low and has decreased, largely due to the decreased prevalence of anaplastic carcinoma. Papillary thyroid cancer predominates in iodine-sufficient areas. For most thyroid cancers, females have a higher preponderance in comparison with males.

There are several known genetic syndromes that confer thyroid cancer risk. Radiation exposure in childhood has been shown to be an unequivocal risk factor, and a history of goiter or benign nodules/adenomas is the next strongest risk factor. The risk factors with established causality for thyroid cancers are a few, while most of the risk factors are only hypothesized. A knowledge base about thyroid malignancies is always needed to improve the perspectives of the

disease. This knowledge will help in prevention and management of thyroid cancers in the days to come.

OBJECTIVES

1. To estimate the prevalence of the different types of thyroid cancers.
2. To analyze the clinical presentations of different forms of malignant thyroid neoplasm's.

METHODOLOGY STUDY SETTING

This retrospective study of hospital records was done in the Department of General Surgery of our medical college hospital among patients with a diagnosis of thyroid cancers between January 2014 and September 2017.

Study population

The medical records of all patients with thyroid cancers admitted in our medical college hospital from January 2014 to September 2017 were selected for the study. Patients who had thyroid carcinoma on histopathology examination were included in the Study.

Ethical approval

Approval from the Institutional Ethics Committee was obtained prior to the commencement of the study.

Data collection

Data regarding the clinical examination and indirect laryngoscopy (done by E.N.T. Surgeons) for evaluation of vocal cord status were recorded. Ultrasound findings of the neck and Fine Needle Aspiration Cytology (FNAC) findings were documented. Patients who were symptomatic or had a positive or indeterminate FNAC were subjected to surgery. The relevant information was tabulated and used for analysis. The Observations were compared with the current literature on thyroid cancers and conclusions were drawn.

Data analysis

Data was entered and analyzed using Microsoft Excel 2007 spreadsheet. The prevalence and determinants of thyroid cancers were expressed as percentages.

RESULTS

This study was carried out among the medical records of 50 patients with thyroid cancer diagnosed by histopathology. The Demographic parameters of the patients were given in Table 1. In this study the peak

prevalence of thyroid cancers was found to be between 21-30 years of age. The Peak prevalence of thyroid malignancies in males was > 50 years of age and in females was between 21-30 years of age. The average age of prevalence of thyroid cancers in males and female was

59.4 years and 38.8 years respectively. In this study the peak prevalence was found in papillary thyroid, in male out of 5 cases 3 cases (60%) were present and in female out of 45 cases 36 cases (80%) were present.0

TABLE 1: Demographic parameters of patients with thyroid cancer.

S. No.	Demographic parameters	Male		Female		Total	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1	Age (in years)						
	< 10	0	0	0	0	0	0
	11-20	0	0	4	8.9	4	8
	21-30	0	0	13	28.9	13	26
	31-40	1	20	8	17.8	9	18
	41-50	0	0	12	26.7	12	24
	51-60	2	40	6	13.3	8	16
>60	2	40	2	4.4	4	8	
2	Type of Thyroid cancers						
	Papillary	3	60	36	92.3	39	78
	Follicular	-	-	5	100	5	10
	Medullary	1	20	3	75	4	8
	Anaplastic	1	20	1	50	2	4
	Total	5	100	45	100	50	100

The distribution of patients according to age and peak prevalence for the different types of thyroid cancers is given in Table 2. The age range for patients with papillary thyroid cancers was 16 – 70 years, with an average age of prevalence of 36.02 years and the peak age of

prevalence was reported as 21-30 years. The age of patients with anaplastic thyroid cancers was than 70 years, average age of prevalence was 76 years.

TABLE 2: Age-wise distribution of thyroid cancers among the study population:

S. No	Type of Cancer	Age range (in years)	Average age of detection (in years)	Peak prevalence (in years)
1	Papillary	16-70	36.02	21-30
2	Follicular	50-70	56	51-60
3	Medullary	50-60	52.5	31-50
4	Anaplastic	> 70	76	> 60

DISCUSSION

This study has elucidated the prevalence and distribution of thyroid malignancies in Tamil Nadu. The prevalence of various types of thyroid carcinomas correlates approximately with the literature across the world. Papillary carcinoma of thyroid is the most common thyroid malignancy in the study group. The Male: Female ratio in the study group is 1:9. However, worldwide, the sex ratio has been 1:1.5. In the study group, median age at diagnosis for females is 38 years and for males is 60 years. This is comparable to the studies published, where median age at diagnosis is earlier in females than in males for both papillary and follicular subtypes.

disease localized to thyroid at presentation. In the study group, 60.3% patients have disease localized to the thyroid. According to known data, 33-61% of patients with papillary thyroid cancer have metastatic cervical lymphadenopathy at diagnosis. In this study group, 56% patients (ie 22 patients out of 39) with papillary thyroid cancers had metastatic cervical lymph nodes at presentation. About 1-2% of patients with papillary thyroid cancer have distant metastasis at diagnosis. In the study group 2.5% of patients had distant metastasis. This is associated with a very poor prognosis.

Usually 2/3rd of patients with differentiated thyroid carcinoma have

The comparison of the results of our study with the available literature is given in the table below (Table 3):

TABLE 3: Comparison of the results with the literature:

S. No	Type of carcinoma	% In the study group	World literature (%)
1	Papillary	78	80-85
2	Follicular	10	5-10
3	Medullary	8	< 10
4	Anaplastic	4	5

CONCLUSION

This study was carried out with a focus on understanding the pattern of distribution of thyroid cancers among hospitalized patients. It was observed that papillary cancers are the most common forms of thyroid malignancies and females are predominantly affected by thyroid cancers. The age distribution of the thyroid malignancies indicates an early preponderance of these cancers, especially papillary carcinomas. This study has put forth the need for effective screening programmes, to detect the presence of thyroid cancers in the population at their incipient stages, so as to prevent the morbidity and mortality associated with it.

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