ORIGINAL RESEARCH PAPER

Volume-7 | Issue-11 | November-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

BEHAVIOUR OF ANAPLASTIC THYROID CARCINOMA IN TERTIARY CARE CENTRE, SOUTH INDIA.

Endocrinology

Dr. S. Zahir Hussain M.S.,M.Ch., Associate Professor, Department of Endocrine Surgery, Madras Medical College, Chennai-6.

Dr. M. P. Kumaran* M.S.,M.Ch., Assistant Professor, Department of Endocrine Surgery, Madras Medical College, Chennai-6. *Corresponding Author

ABSTRACT

INTRODUCTION: Anaplastic thyroid cancer (ATC) is one of the most aggressive solid tumors to affect humans, with a median survival on the order of 3 to 5 months following diagnosis [1]. Recent advances in understanding the genetic and molecular pathogenesis of ATC hold promise for targeted therapy for this disease.

METHODS: This retrospective study was conducted for 7 years from 2011 to 2018, included patients who were admitted in the endocrine surgery department in the tertiary hospital with thyroid malignancies. The clinical, operative, cytological, and histological data were tabulated and statistically analyzed.

RESULTS: Of the 386 patients analyzed, 350 patients (91.57%) were females and 36 patients were males (9%) ($P < 0.001$) which shows high significant difference between genders at 0.1% level. Final Histopathology showed papillary thyroid carcinoma in 340 patients, poorly differentiated thyroid carcinoma in 8 patients, anaplastic thyroid carcinoma in 18 patients. Out of 18 patients with anaplastic thyroid carcinoma 8 patients presented with mild dyspnea, 2 patients had dysphagia and 10 patients suffered from hoarseness of voice. The mean patients age were 45 years. 12 patients had intra thyroid tumour, 4 patients had invasion to the strep muscles, 2 patients had adhered to trachea. Overall cause specific mortality rate was 60% at 6 months and 40 % at 12 months.

CONCLUSION: The overall prognosis of ATC continues to be poor with the 5 year survival from 5.6 to 11.4% . Age is the most important factor in the patients with ATC.

KEYWORDS

Thyroid Malignancy, Anaplastic thyroid cancer, Targeted therapy

1. INTRODUCTION

AIM: The aim of the study is to

Anaplastic thyroid cancer (ATC) is one of the most aggressive solid tumors to affect humans, with a median survival on the order of 3 to 5 months following diagnosis [1]. Oneyear and 10-year survival rates are estimated at 10–20% and less than 5%, respectively, though some reports question the reliability of diagnoses in these long-term survivors [2, 3, 4]. Even though less than 1–3% of all thyroid cancers are anaplastic tumors, it contributes up to 14–50% of the annual mortality associated with thyroid cancer [5,6]. Recent advances in understanding the genetic and molecular pathogenesis of ATC hold promise for targeted therapy for this disease. ATC is usually resistant to standard chemotherapy. There are several clinical trials underway with small molecule tyrosine kinase inhibitors, antiangiogenesis agents and vascular-disrupting agents which might offer more drugs in the therapeutic armamentarium to combat this disease.

MATERIALS AND METHODS:

Place and Type of Study: This retrospective study was conducted in Department of Endocrine Surgery, Madras Medical College for 7 years from 2011 to 2018.

SAMPLING METHODS: These patients were registered, subjected to clinical examination, and investigated with radiological and basic laboratory tests including thyroid hormone assay and fine-needle aspiration cytology of thyroid. Informed written consent was obtained, and these patients were given surgical resections based on hospital protocol and the thyroidectomy samples were sent for histopathological evaluation.

Sample Collection:

Inclusion criteria: included patients who were admitted in the endocrine surgery department in Madras Medical College with thyroid malignancies. Patients who were found with cytological evidence of thyroid malignancy or metastatic deposits in cervical lymph node aspirates were included in the study.

Exclusion criteria: Patients with multinodular or solitary thyroid enlargements with ultrasonogram, fine-needle aspirate proven benign thyroid nodule were excluded from the study.

Statistical Methods: The clinical, operative, cytological, and histological data were tabulated and statistically analyzed by SPSS.

RESULTS:

Gender (Table 1)

Total (n)	Male(n)	Female(n)	Sigificance
386	36 (9%)	350(91.57)	P0.001

Of the 386 patients analyzed, 350 patients (91.57%) were females and 36 patients were males (9%) ($P < 0.001$) which shows high significant difference between genders at 0.1% level. Nearly 300 patients (77%) of the patients were between 21 and 40 years, 18 patients (5.6%) were less than 20 years, 50 patients (12%) were between 41 and 60 years, and 18 patients (5.6%) were above 60 years. $P < 0.001$ shows high significant difference between age groups at 0.1% level. 8 patients had dyspnoea 2 patients had dysphagia and 12 patients were suffering from hoarseness of voice. All the patients had Goitre, size on presentation of goiter was 4±3.5 and median duration was 5 years and 36 patients were found with cervical lymph nodes. On Ultrasonographic evaluation solitary lesions were found in 200 patients, multiple nodule in 186 patients and calcification in 28 patients. FNAC showed Papillary ca thyroid in 335 patients, Hashimotos thyroiditis in 10 patients, Nodular colloid goiter in 10 patients, suspicious of malignancy in 8 patient, follicular neoplasm in 3 patients, poorly differentiated thyroid carcinoma in 5 patients and Anaplastic thyroid Carcinoma in 15 patients.

Histopathology (Table 2)

Papillary Thyroid Carcinoma (n)	340
Poorly Differentiated Thyroid Carcinoma (n)	8
Anaplastic Thyroid Carcinoma (n)	18

Final Histopathology showed papillary thyroid carcinoma in 340 patients, poorly differentiated thyroid carcinoma in 8 patients, anaplastic thyroid carcinoma in 18 patients, 300 patients had done radio iodine ablation and EBRT done in 25 patients.

Presentation of Anaplastic Thyroid Carcinoma (n-18) (Table 3)

Mild Dyspnea(n)	Dysphagia(n)	Hoarseness of voice(n)
8	2	8

Out of 18 patients with anaplastic thyroid carcinoma 8 patients presented with mild dyspnea, 2 patients had dysphagia and 8 patients

suffered from hoarseness of voice. The mean patients age were 45 years. 12 patients had intra thyroid tumour, 4 patients had invasion to the strep muscles, 2 patients had adhered to trachea. Average size of all the tumours are 6.5cms. 15 patients underwent surgical resection for their primary tumour and received external beam radio theraphy after surgery and 3 patients received only external beam radio theraphy. Overall cause specific mortality rate was 60% at 6 months and 40 % at 12 months.

DISCUSSION:

The average age of patients with ATC in our study was 60 years, and more than half of the patients were in their seventh decade of life. Only one affected were younger than 40 years of age. Our oldest patient with anaplastic thyroid cancer was an 76-year-old man. According to the literature, the largest number of patients with anaplastic carcinoma of the thyroid gland is in the seventh and eighth decade of life [7]. The average age of patients ranges from 65 to 72 years, and there is no significant difference between men and women in relation to the age at which anaplastic thyroid cancer usually occurs [8,9].

In our study the incidence of ATC is 4.6% which is contradictory to Studies published from Italy showed a reduction of ATC from 4% to 1% between 1969 and 1973, but another study in India showed a decline from 8% to 4% between 1989 and 1993 [10,11,12]. Our Study corresponds with Indian Study although well-differentiated thyroid cancer has increased in Japan, the incidence of ATC has remained stable [13,14]. One for the decreasing incidence of ATC in these several locations could be that a more accurate diagnosis is beingmade.

In one study, 25% of the ATC patients had a prior history of thyroid goiter and another 10% with family history ofgoiter [15]. Other studies have reported a similar association between goiter and ATC [16]. It is also known that ATC is more common in places with endemic goiter, and thus with improvements in iodine supplementation, the incidence of this tumor would be expected to decline. In our study also 40% patients had prior history of thyroid cancer.

Local symptoms of ATC most commonly begin with a rapidly evolving central neck mass (77%) followed by noticeable dysphagia (40%), voice change or hoarseness (40%), and stridor (24%). Regional symptoms included a noticeable lymph node mass (54%) and neck pain (26%). Systemic symptoms include anorexia, weight loss, and shortness of breath with pulmonary metastases. Metastases were found in 50% of patients at presentation with 25% developing metastasis during the course of disease. Lungs (80%), bone (6–16%), and brain (5–13%) were themost common sites of metastasis [14]. In our study Out of 18 patients with anaplastic thyroid carcinoma 8 patients presented with mild dyspnea, 2 patients had dysphagia and 10 patients suffered from hoarseness of voice.

CONCLUSION:

The overall prognosis of ATC continues to be poor with the 5 year survival from 5.6 to 11.4% . Age is the most important factor in the patients with ATC. The limitation of our study is relatively small number of patients although it is one of the single institution series.

Requirement : Prospective protocol evaluation are needed for ATC patients.

REFERENCE:

1. K. B. Ain, "Anaplastic thyroid carcinoma: a therapeutic challenge," Seminars in Surgical Oncology,vol.16,no.1,pp. 64–69, 1999.
2. E.Kebebew,F.S.Greenspan,O.H.Clark,K.A.Woeber, and A. McMillan, "Anaplastic thyroid carcinoma: treatment outcome and prognostic factors," Cancer, vol. 103, no. 7, pp. 1330–1335, 2005.
3. C. Are and A. R. Shaha, "Anaplastic thyroid carcinoma:biology, pathogenesis, prognostic factors, and treatment approaches," Annals of Surgical Oncology, vol.13, no.4, pp.453–464, 2006.
4. B.McIver,I.D.Hay,D.F.Giuffrida et al., "Anaplastic thyroid carcinoma: a 50-year experience at a single institution," Surgery, vol. 130, no. 6, pp. 1028–1034, 2001.
5. S.A.Hundahl,I.D.Fleming,A.M.Fremgen,andH.R.Menck, "A National Cancer Data Base report on 53,856 cases of thyroid carcinoma treated in the U.S., 1985–1995," Cancer, vol. 83, no. 12, pp. 2638–2648, 1998.
6. A.Jemal,R.Siegel,E.Ward,T.Murray,J.Xu,andM.J.Thun, "Cancer statistics, 2007," CA: A Cancer Journal for Clinicians, vol. 57, no. 1, pp. 43–66, 2007.
7. I. Sugitani, N. Kasai, Y. Fujimoto, and A. Yanagisawa, "Prognostic factors and therapeutic strategy for anaplastic carcinoma of the thyroid," World Journal of Surgery, vol. 25, no. 5, pp. 617–622, 2001. View at Publisher • View at Google Scholar • View at Scopus.
8. T. Yau, C. Y. Lo, R. J. Epstein, A. K. Y. Lam, K. Y. Wan, and B. H. Lang, "Treatment outcomes in anaplastic thyroid carcinoma: survival improvement in young patients with localized disease treated by combination of surgery and radiotherapy," Annals of Surgical Oncology, vol. 15, no. 9, pp. 2500–2505, 2008. View at Publisher • View at Google Scholar • View at Scopus
9. B. McIver, I. D. Hay, D. F. Giuffrida et al., "Anaplastic thyroid carcinoma: a 50-year experience at a single institution," Surgery, vol. 130, no. 6, pp. 1028–1034, 2001. View at Publisher • View at Google Scholar • View at Scopus
10. S. Agrawal, R. S. Rao, D. M. Parikh, H. K. Parikh, A. M.Borges, and M. B. Sampat, "Histologic trends in thyroidcancer 1969–1993: a clinico-pathologic analysis of the relativeproportion of anaplastic carcinoma of the thyroid," Journal ofSurgical Oncology, vol. 63, no. 4, pp. 251–255, 1996.
11. P. Lampertico, "Anaplastic (sarcomatoid) carcinoma of thethyroid gland," Seminars in Diagnostic Pathology, vol. 10, no.2, pp. 159–168, 1993.
12. P. Trimboli, S. Ulisse, F. M. Graziano et al., "Trend inthyroid carcinoma size, age at diagnosis, and histology ina retrospective study of 500 cases diagnosed over 20 years,"Thyroid, vol. 16, no. 11, pp. 1151–1155, 2006.
13. H. Ezaki, S. Ebihara, Y. Fujimoto et al., "Analysis of thyroidcarcinoma based on material registered in Japan during1977–1986 with special reference to predominance of papillarytype," Cancer, vol. 70, no. 4, pp. 808–814, 1992.
14. W. Kitagawa, K. Shimizu, H. Akasu, and S. Tanaka,"Endocrine surgery. The ninth report: the latest data onand clinical characteristics of the epidemiology of thyroidcarcinoma," Journal of Nippon Medical School, vol. 70, no. 1,pp. 57–61, 2003.
15. S. A. Hundahl, B. Cady, M. P. Cunningham et al., "Initialresults from a prospective cohort study of 5583 cases ofthyroid carcinoma treated in the united states during 1996.U.S. andGerman Thyroid Cancer Study Group. An AmericanCollege of Surgeons Commission on Cancer Patient CareEvaluation study," Cancer, vol. 89, no. 1, pp. 202–217, 2000.
16. F. Bakiri, F. K. Djemli, L. A. Mokrane, and F. K. Djidel,"The relative roles of endemic goiter and socioeconomicdevelopment status in the prognosis of thyroid carcinoma,"Cancer, vol. 82, no. 6, pp. 1146–1153, 1998.