PE 110

International Surgical Week
The World's Congress of Surgery
isw2024.org
Kuala Lumpur, Malaysia
25-29 August 2024

Paediatric thyroid carcinoma: a review of a single institutional experience in Malaysia

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Introduction

Thyroid carcinoma is rare in the paediatric age group, and available published data consist mainly of single- institution series, which have inherent bias and may not reflect populations outside that institution. The aim of this study is to describe and evaluate the clinical characteristics, treatment, and prognosis of thyroid cancer in children and adolescents that were managed at Hospital Putrajaya, Malaysia.

Materials & Methods

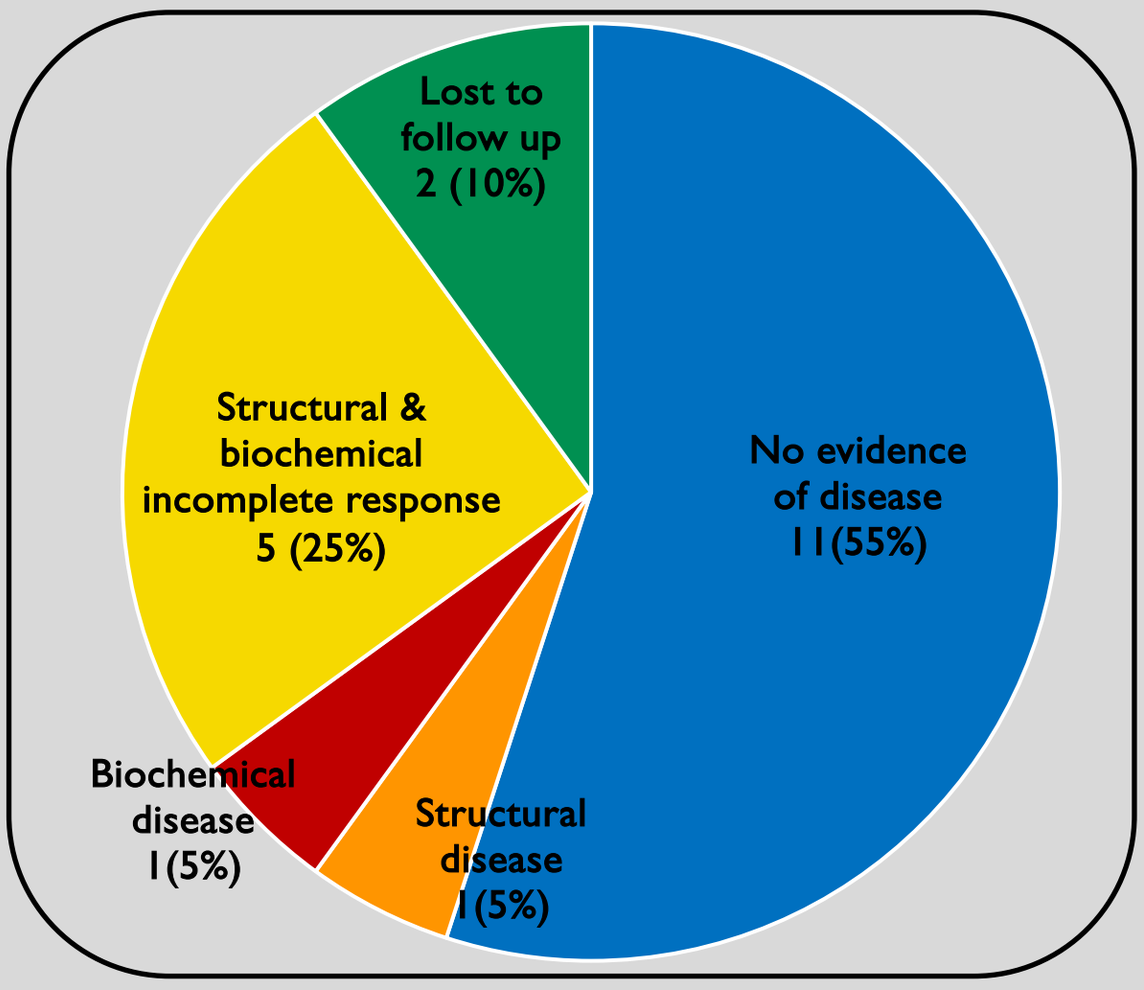
We performed a retrospective analysis of clinical data of thyroid cancer in children and adolescents (≤18 years of age) who were treated in Hospital Putrajaya from January 2012 to December 2021. Correlations between categorical variables were made using chi squared test.

Results

Table 1: Clinical and treatment characteritics

Parameters	Characteristics	Value (n)
Age	<12	5
	≥12	15
Gender	Male	9
	Female	11
Nodal disease	Yes	8
	No	12
Cervical dissection	Yes	8
	No	12
Re-do surgery	Yes	1
	No	19
RAI	Yes	15
	No	5
Metastatic disease	Yes	5
	No	15

Figure 1: Clinical outcome



Data on 20 patients were available for analysis. Females (55%) were predominant, and the median age of presentation was 13.0 (9-18) years old. With a median follow-up duration of 4 years, 11 patients showed no evidence of residual disease; 7 patients had biochemical and/or structural residual disease, and 2 patients were lost to f/up. There have been no reported deaths thus far. Our statistical analysis failed to reveal the significant effect of gender or age on presence of residual disease (p=0.387 and 0.434). There was also no significant correlation between gender and presence of nodal disease at presentation (p=0.168)

Discussion

Differentiated thyroid carcinoma(DTC) is the most common, accounting for approximately 1.4% of all paediatric malignancies[1]. In our series of 20 patients with thyroid cancer, all of them had DTC. There is a female preponderance concordant with the literature[2], most likely related to estrogen sensitivity of the thyroid gland. The proportion of patients with regional disease (40%), and distant metastases at diagnosis (25%) concur with findings in literature[2]. Treatment options are similar between children and adults and are based in combination of three therapeutic modalities: surgery, hormone replacement with levothyroxine (LT4) and radioiodine treatment. Radioiodine ablation was performed in 75% of the patients. Though lacking randomized control trials to support this, many authors recommend that most children should be treated with RAI to ablate residual disease and reduce the risk of recurrence[3]. Our survival rate was 100%, but at last follow-up 7 patients had residual disease. Considering the slow course of TC, this is a relatively short time of median follow-up (4 years). The limitations of this study are its small sample size, its retrospective conduct and its relatively short follow up period. A temporal extension of the study will allow more reliable conclusions.

Conclusion

All care of paediatric DTC should be delivered by multidisciplinary specialized teams to minimize possible complications and ensure competent lifelong follow up, because recurrence and metastasis may not occur for decades after diagnosis. Large multicentre trials and prospective data should be collected to understand the long-term impact of diagnosis and treatment.

References

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