

AUSTRALIAN MALES AND FEMALES HAVE SIMILAR RATES OF PRESENTATION FOR SYMPTOMATIC AND ADVANCED THYROID CANCER: RETROSPECTIVE ANALYSIS OF THE AUSTRALIAN NEW ZEALAND THYROID CANCER REGISTRY

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Introduction

- Thyroid cancer is more common in females than in males.
- The Surveillance, Epidemiology, and End Results (SEER) data suggest this difference is due to the overdiagnosis of small incidental cancers.
- The SEER data does not include information on symptomatic presentation.
- This study uses the Australian & New Zealand Thyroid Cancer Registry (ANZTCR) to investigate whether symptomatic presentation varies between sexes.

Materials & Methods

- A retrospective analysis of ANZTCR data between 2017-2022 was performed.
- Symptomatic cases were defined as patients with thyroid compressing symptoms, toxic goitre, Graves' disease, or abnormal laryngoscopy.
- Cases with asymptomatic goitre or surgeries for a thyroid nodule were classified as incidental.

Results

- Among 1702 patients with differentiated thyroid cancer (DTC), 1082 had presentation information.
- 37% of patients were symptomatic (Table 1): 32% of males vs 38% of females with DTC
- Females were more likely to be diagnosed with early-stage thyroid cancers in comparison to males (81% vs. 19%, $p < 0.001$) (Table 2).
- Similar rates of advanced thyroid cancer (T3-4) presentation in males and females: $n=70$, 47% vs. $n=79$, 53% (Table 2)
- Females had a higher prevalence of low-risk relapse category cancers (ATA stratification): 66.3% vs 50.4%, $p < 0.001$ (Table 3)
- Males had a higher prevalence of high-risk relapse category cancers: 27.3% vs. 15.3%, $p < 0.001$ (Table 3)

DTC	Total (n=1082)	Males (n=278)	Females (n=804)	p-value
Symptomatic, n (%)	398 (36.8)	89 (32.0)	309 (38.4)	0.060
Asymptomatic, n (%)	684 (63.2)	189 (68.0)	495 (61.6)	

Table 1: Symptomatic vs asymptomatic diagnoses of differentiated thyroid cancer between males and females.

DTC	Total (n=1082)	Males (n=278)	Females (n=804)	p-value
T1a	499	94 (19%)	405 (81%)	<0.001
T3 – T4	149	70 (47%)	79 (53%)	

Table 2: T-staging of symptomatic vs asymptomatic DTCs by sex

ATA risk stratification for recurrence/relapse of thyroid cancer, n (%)	Total (n = 1082)	Males (n =278)	Females (n = 804)	p-value
Low	673 (62.2)	140 (50.4)	533 (66.3)	<0.001
Intermediate	210 (19.4)	62 (22.3)	148 (18.4)	
High	199 (18.4)	76 (27.3)	123 (15.3)	

Table 3: ATA risk stratification for recurrence/relapse of thyroid cancer between males and females

Discussion

- Symptomatic detection of thyroid cancer is similar between males and females.
- Sex disparity in thyroid cancer incidence involves small, subclinical PTCs, diagnosed more often in women.
- Males are more likely to present at a later age with larger cancers, increasing their relapse/recurrence risk.
- Previous studies also found a higher incidence of thyroid cancer in females for microcarcinomas (5-10mm).
- The higher incidence in females is not purely due to biological risk but other factors like overdiagnosis.
- Referrer bias and higher healthcare-seeking behaviour in females may contribute to the disparity (1).
- South Korea's screening program, with higher female participation, led to a significant rise in thyroid cancer diagnoses (2).
- Overdiagnosis may lead to unnecessary treatment and economic costs without reducing thyroid cancer mortality.
- Our study's limitations include reliance on registry data and potential selection bias.

Conclusion

This study highlights comparable rates of symptomatic detection between sexes. Understanding the factors contributing to increased female diagnosis is crucial for optimising thyroid cancer patient care.

References

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