

The impact of delayed diagnosis and treatment due to COVID-19 on patients with thyroid cancer in Australia: a quantitative registry-based study

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BACKGROUND

The ongoing coronavirus (COVID-19) pandemic has led to a global public health response. (1) In Australia, higher restriction lockdown periods resulted in non-urgent elective surgery being postponed from the 25 March 2020. (2) This has had a significant impact on patients with thyroid cancer, as the standard treatment for thyroid cancer is surgical removal of part or all of the thyroid (hemi- or total-thyroidectomy), depending on the type of thyroid cancer and/or size of the tumour(s). (3)

AIMS

The aim of this research is to provide an Australian-based perspective on the impact of COVID-19 on the diagnosis and treatment of patients with thyroid cancer in Australia, by quantitatively exploring the impact of COVID-19 on patterns of treatment for patients diagnosed with thyroid cancer.

METHODOLOGY

This study included 1,153 eligible participants in the Australian and New Zealand Thyroid Cancer registry, with 878 patients treated before the pandemic (**non-COVID group**, 1 January 2017 to 25 March 2020) and 275 patients treated after restrictions to healthcare were introduced (**COVID group**, 26 March 2020 to 31 December 2020).

Patients eligible for this study were aged 18 years or older, participating in the ANZTCR and were not diagnosed with non-invasive follicular thyroid neoplasm with papillary-like nuclear features (NIFT-P).

RESULTS

Analysis of demographic data suggests that more patients in the COVID group were treated in a private hospital (non-COVID: 54%, COVID: 67%), $p < 0.001$. There was a significant difference in neck examination findings between the two groups, with patients in the COVID group less likely to have normal neck examination findings (non-COVID: 13.4%, COVID: 3.4%), and more likely to present with a multi-nodular goitre (non-COVID: 40.7%, COVID: 56.9%), $p < 0.001$. A significant lower percentage of patients in the COVID group had pre-operative tests conducted (i.e. CT scan), which is consistent with government directives that restricted certain healthcare access at the time.

Despite findings of more advanced disease pathologically for the overall cohort, there were no significant differences in primary tumour (T), regional lymph nodes (N), or distant metastases (M) staging between the two groups. Additionally, significantly less patients in the COVID group were presented at a Multidisciplinary Team Meeting (MDM) (COVID: 32.9%, non-COVID: 51.4%), $p < 0.001$.

STRENGTHS & LIMITATIONS

Using a clinician-entered, registry-based dataset for analysis can provide a more informed understanding of the impact that COVID-19 may have had on patients with thyroid cancer in Australia.

However, registry data can be susceptible to incomplete entries and human error, due to manual data entry methods. By utilising clinician-entered data, there may be improved availability of data in a timely manner, as well as a reduced risk of inaccurate patient data being entered.

To mitigate the impact of incomplete data, the ANZTCR dataset was cleaned by a data analyst, prior to analysis. The analysis and interpretation of data was overlooked by the ANZTCR clinical team and a biostatistician.

CONCLUSIONS

The analysis of this registry-based data has demonstrated **pathological findings of more advanced disease but not an increase of advanced stage**.

Additionally, a wider uptake of telehealth was observed, with more private operating, presentations of symptomatic disease and reduced use of MDMs.

These findings suggest that further research is required in the future to assess the clinical impact of possible disease progression to patients impacted by COVID-19 delays.

ETHICS

This research has received ethically approved by the Monash University Human Research and Ethics Committee.

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