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The Definition of Recurrence of Differentiated Thyroid Cancer. A Systematic Review

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Conclusion

There is **no universally accepted definition for recurrence** of differentiated thyroid cancer (DTC) across any of the treatment categories.

The results of this systematic review provide the basis for an international Delphi Study aimed at establishing novel and universally accepted definitions of recurrence of DTC.

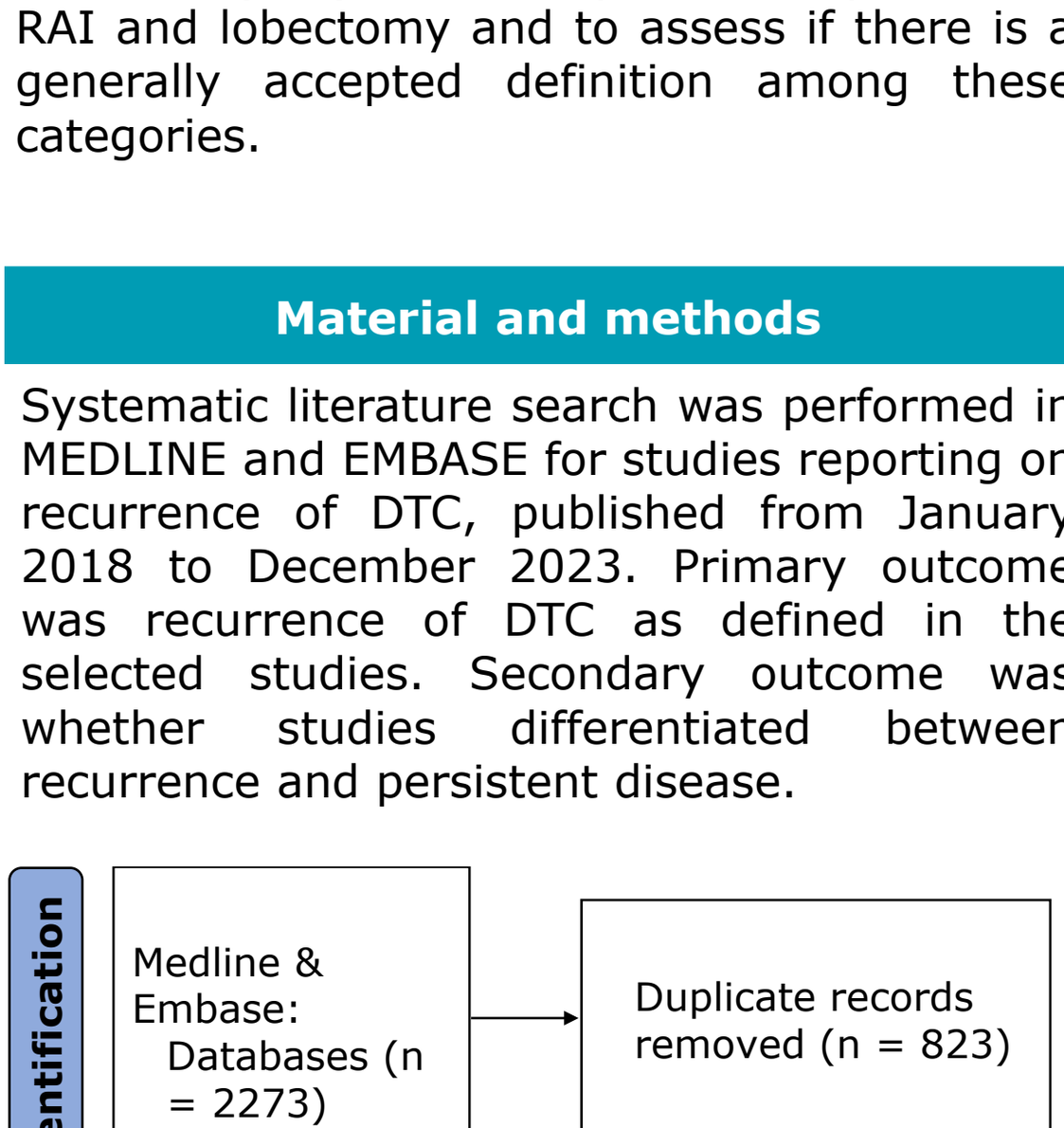
The results of this Delphi study are expected by fall 2024.

Background

No consistent definition of recurrence of DTC is available in the current literature or international guidelines. The **primary aim of this systematic review** was to delineate the definitions of recurrence of DTC, categorized by total thyroidectomy with radioactive iodine ablation (RAI), total thyroidectomy without RAI and lobectomy and to assess if there is a generally accepted definition among these categories.

Material and methods

Systematic literature search was performed in MEDLINE and EMBASE for studies reporting on recurrence of DTC, published from January 2018 to December 2023. Primary outcome was recurrence of DTC as defined in the selected studies. Secondary outcome was whether studies differentiated between recurrence and persistent disease.



Results

In total, 70 studies were included.
Forty-nine studies (70.0%) reported on total thyroidectomy with RAI, 17 studies (24.3%) on lobectomy, 4 studies (5.7%) on total thyroidectomy without RAI.

All studies defined recurrence using one or a combination of four **diagnostic modalities**:
1. Cytology/pathology
2. Imaging studies
3. Thyroglobulin(-antibodies)
4. Predetermined minimum tumor-free time span

- The most common definition of recurrence following **lobectomy** was cytology/pathology-proven recurrence (47.1% of this subgroup).
- The most common definition of recurrence following **total thyroidectomy with RAI** was cytology/pathology-proven recurrence and/or anomalies detected on imaging studies (22.4% of this subgroup).
- No consistent definition was found following **total thyroidectomy without RAI**, as all four studies defined recurrence differently.

Nine studies (12.9% of total studies) differentiated between **recurrence and persistent disease**.

- Persistent disease was defined as persistent Tg(-antibodies), persistent structural abnormalities in imaging studies, and cytology/pathology findings in 4/9 studies (44.4%).
- Persistent disease was defined as persistent Tg or evidence of continued structural disease on imaging studies in 3/9 studies (33.3%).
- Persistent disease was defined as a fixed 12-month period following initial treatment in 2/9 studies (22.2%).