INPLASY PROTOCOL

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None declared.

Prevalence of Thyroid cancer in Saudi Arabis: Systematic review and Meta-analysis

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Review question / Objective: **What is the prevalence of Thyroid cancer among population in kingdom of Saudi Arabia?. The aim of this systematic review is to scrutinize the prevalence of thyroid cancer (TC) in Saudi Arabia and assess the relative frequency of subgroups related to types of thyroid cancer, age, and gender.**
Condition being studied: **Thyroid cancer is an abnormal growth of cells that starts in the thyroid gland. There is four types of differentiated thyroid cancer, three of these cancer develop from the follicular cells, the papillary thyroid cancer, follicular thyroid cancer, Hürthle cell carcinoma, and one rare type develops from the thyroid's C cells called medullary thyroid cancer. There is one undifferentiated thyroid cancer called anaplastic thyroid cancer.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 September 2022 and was last updated on 18 September 2022 (registration number INPLASY202290088).

INTRODUCTION

Review question / Objective: **What is the prevalence of Thyroid cancer among population in kingdom of Saudi Arabia?. The aim of this systematic review is to scrutinize the prevalence of thyroid cancer (TC) in Saudi Arabia and assess the relative frequency of subgroups related to types of thyroid cancer, age, and gender.**

Rationale: **The systematic review is preformed to find the prevelance of thyroid cancer in saudi arabia, and the relative frequancy in each subgroups including the age, gender, and types of thyroid cancer.**

Condition being studied: Thyroid cancer is an abnormal growth of cells that starts in the thyroid gland. There is four types of differentiated thyroid cancer, three of these cancer develop from the follicular cells, the papillary thyroid cancer, follicular thyroid cancer, Hürthle cell carcinoma, and one rare type develops from the thyroid's C cells called medullary thyroid cancer. There is one undifferentiated thyroid cancer called anaplastic thyroid cancer.

METHODS

Search strategy: The following bibliographic databases was covered: MEDLINE, PubMed, Web of science, Scopus, Cochrane library, OVID, EBSCO, Saudi medical journal, Google scholar, Embase. The search wasn't limited to databases, but included key journals, reference of eligible studies, registers, conference proceeding, and the contact with study investigators and experts. Search strategy in databases was by using free-text terms, and standardized search terms. We included all terms related to prevalence, thyroid cancer, and Saudi Arabia. The boolean operators used to combine the terms is (OR, AND). The re-run of search would be prior to the final analysis, and further studies retrieved or included.

Participant or population: All studies about Saudi population with relative frequency types of thyroid cancer enrolled will be eligible for this review, with no exclusions based on ethnicity or age.Exclusion criteria: Thyroid benign tumor, Secondary thyroid cancer.

Intervention: None.

Comparator: None.

Study designs to be included: Types of studies included are cross-sectional studies, Randomized controlled trials, cohort studies, and case-control studies. Otherwise, studies excluded are case reports, case series, and systemic reviews.

Eligibility criteria: case studies, case series, thyroid benign tumor, Insufficient data.

Information sources: We will cover the following bibliographic databases: MEDLINE, PubMed, Web of science, Scopus, Cochrane library, OVID, EBSCO, Saudi medical journal, Google scholar, Embase. The search won't be limited to databases, but will include key journals, reference of eligible studies, trials registers, conference proceeding, and the contact with study investigators and experts. The search strategy in databases will include terms relating to prevalence, thyroid cancer, and Saudi Arabia. The re-run of search will be prior to the final analysis, and further studies retrieved or included.

Main outcome(s): The prevalence of thyroid cancer in Saudi Arabia.

Additional outcome(s): Subgroup analysis of relative frequency for gender, age, and types of thyroid cancer among thyroid cancer patients in Saudi Arabia.

Data management: Study selection will be done with two reviewers independently, and make double-checked with two different researchers, studies selected will be screened and merged using endnote to remove duplicates, and to screen titles and abstracts. In presence of disagreement, it will be resolved by a discussion on the matter with the whole team. The data extraction will be done also by two researchers and checked by another two researchers. the data extraction will include the following information: details of publication, geographical location, study population, different age groups, gender, measuring tools, and bias risk assessment. The missing data will be requested from the study authors. Measures of effect: Prevalence of thyroid cancer in Saudi Arabia.

Quality assessment / Risk of bias analysis: The bias risk assessment will be performed by two authors on studies that met the inclusion criteria. The hoy et el bias risk tool will be used for appraisal of these

studies, and to find the external and internal validity.

Strategy of data synthesis: RevMan software will be used for Meta-analysis, By taking the data for relative frequency in forest plot, We report 95% CI, The heterogeneity by chi-square, we will analyze fixed effects model and random effects model.

Subgroup analysis: Relative frequency for gender, age, and types of thyroid cancer among thyroid cancer patients in Saudi Arabia.

Sensitivity analysis: We will explore sensitivity of the result to the use of random or fixed-effect models.

Language restriction: Yes.

Country(ies) involved: Saudi Arabia.

Keywords: Prevalence; frequency; thyroid gland; thyroid cancer; papillary thyroid cancer; follicular thyroid cancer; Saudi Arabia; Saudi population.

Dissemination plans: We aim to publish a journal paper out of this systematic review, But before that summary of results may be presented in a national conference in the KSA.

Contributions of each author:

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