INPLASY

Long Term Thyroid Complications Post-COVID-19: A Systematic Review

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 November 2025 and was last updated on 27 November 2025.

INTRODUCTION

Review question / Objective Many studies highlighted the onset of thyroid disorders following COVID-19 infection, both as a transient complication and permanent sequelae. In light of these observations, we aim to investigate the de novo, long term thyroid complications in individuals with a history of SARS-CoV-2 infection.

Condition being studied Any long-term thyroid complications post-COVID-19 infection.

METHODS

Search strategy This study is part of a comprehensive project looking at the long term and severe complications of COVID-19. A comprehensive search was conducted by an information professional who prioritized sensitivity to retrieve all relevant studies.

Participant or population No restrictions were made based on country, age or gender.

Intervention NA.

Comparator NA.

Study designs to be included Any clinical study reporting cases of MIS in adults or children post-COVID-19, mainly those reporting long-term complications including Case reports, case series, cohort studies, etc.

Eligibility criteria Only full articles were included, and any conference abstracts were excluded. During the full text screening, any studies that reported long term thyroid complications post-COVID-19 were included. The inclusion criteria related to this point included any patients who developed thyroid complications after recovering from COVID-19 or those who developed thyroid complications during the active infection and lasted for more than 12 weeks.

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Information sources Mainly peer reviewed published research articles. The following databases were searched in October 2023: PubMed, Medline (Ovid, 1946 – Current), Embase (Ovid, 1974 -2021), Scopus, Web of Science, Science Direct and Cochrane Library. The search was designed around keywords and controlled vocabulary that focused on "Long Covid" and variants (see Appendix I for full search details).

Main outcome(s) The study focused on patients who developed thyroid disorders after at least a month after COVID-19 diagnosis or if the study reports that anti-SARS-CoV-2 IgG but not IgM antibodies were detected, the study was included. The studies that reported any related diagnosis during the active COVID-19 infection were included only if the symptoms lasted for more than 12 weeks after COVID-19 diagnosis, if the patients received a treatment for the disorder for at least 12 weeks after COVID-19 diagnosis or if the patient died before 12 weeks. Any thyroid conditions that were diagnosed during the active infection of COVID-19 and fully recovered within less than 12 weeks were excluded. Any studies that included only patients with a history of thyroid illness were excluded.

Quality assessment / Risk of bias analysis The quality of the included studies was assessed using different methods depending on the type of study. The Newcastle-Ottawa Quality Assessment Scale was used to assess the cohort studies (NOS) and the scale developed by Murad et al. was used to assess the case reports and case series. Quality assessment was conducted by two independent reviewers.

Strategy of data synthesis The thyroid conditions reported by the included studies were classified and the number of patients were compiled from all studies under each category.

Subgroup analysis NA.

Sensitivity analysis NA (no meta-analysis was conducted).

Country(ies) involved Different nationalities. All authors affiliated to Weill Cornell Medicine-Qatar.

Keywords COVID-19; SARS-CoV-2; post-COVID-19 sequelae; long-COVID; COVID-19 complications; thyroid; hypothyroidism; hyperthyroidism; subacute thyroiditis; thyrotoxicosis; NTIS.

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