INCIDENCIA Y PREVALENCIA DE HIPOTIROIDISMO EN ESPAÑA, COMORBILIDAD, TRATAMIENTO Y ASOCIACION CON EFECTOS ADVERSOS DE SALUD (GRACHIPES)

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Study Planned

Administrative details

EU PAS number

EUPAS1000000252

Study ID

1000000252

DARWIN EU® study

No

Study countries

Spain

Study description

Estudio para evaluar el grado de control del tratamiento definido por los niveles de TSH y T4 libre que deberían ser normales y su asociación con eventos de salud en pacientes con hipotiroidismo, utilizando la base de datos BIFAP como herramienta clave para obtener una perspectiva más amplia y detallada.
Por ello, estudiaremos una cohorte de pacientes con hipotiroidismo en tratamiento, veremos su grado de control y dosis empleadas de levotiroxina y la compararemos con una cohorte no tratada y otra cohorte similar sin hipotiroidismo para evaluar la asociación del hipotiroidismo y de su tratamiento con el riesgo de fibrilación auricular, insuficiencia cardiaca, osteoporosis, fracturas, trastornos afectivos, insomnio y deterioro cognitivo.
Estudiaremos también otros factores analíticos como son los parámetros lipídicos (colesterol total, HDL colesterol, LDL colesterol y triglicéridos) y los glucémicos (HbA1c y glucemia) dada la relación entre el metabolismo lipídico y glucémico con la función tiroidea.
Objetivo principal
1. Estimar la prevalencia e incidencia de hipotiroidismo global así como el hipotiroidismo tratado y no tratado con levotiroxina en el periodo de estudio (2013-2023)
Objetivos secundarios
1 Descripción de las cohortes incidentes con hipotiroidismo tratado con levotiroxina y no tratado : datos demográficos, estilos de vida, comorbilidad, patrón de tratamiento con levotiroxina (duración, dosis etc..) y uso concomitante de otros fármacos (antidepresivos, ansiolíticos, antipsicóticos e hipnóticos).
2 Estudiar el nivel de TSH en la cohorte incidente con hipotiroidismo tratado con levotiroxina antes del comienzo del tratamiento y después
3 Estudiar la incidencia y asociación de diversos eventos de interés en la cohorte incidente con hipotiroidismo tratado con levotiroxina y de hipotiroidismo no tratado y la cohorte control libre de hipotiroidismo: fibrilación

auricular, insuficiencia cardíaca, fracturas, osteoporosis y/o inicio de fármaco

Study status

Planned

Research institutions and networks

Institutions

Hospital Universitario Central de Asturias

Fundación Centro Español de Investigación Farmacoepidemiológica (CEIFE)

Spain

First published: 15/03/2010

Last updated: 15/02/2024

Institution **Not-for-profit** **ENCePP partner**

Networks

Base de datos para la investigación farmacoepidemiológica en el ámbito público (BIFAP)

Contact details

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Study timelines

Date when funding contract was signed

Actual: 28/05/2024

Study start date

Planned: 01/09/2025

Data analysis start date

Planned: 01/01/2026

Date of final study report

Planned: 01/06/2026

Study protocol

PROTOCOLO consolidado_HipotiroidismoV3 BIFAP_18Junio.pdf (194.62 KB)

Regulatory

Was the study required by a regulatory body?

Unknown

Is the study required by a Risk Management Plan (RMP)?

Not applicable

Methodological aspects

Study type

Study type list

Study topic:

Disease /health condition

Study type:

Non-interventional study

Scope of the study:

Disease epidemiology

Drug utilisation

Safety study (incl. comparative)

Data collection methods:

Primary data collection

Main study objective:

To estimate the prevalence and incidence of global hypothyroidism as well as treated and untreated hypothyroidism with levothyroxine in the study period (2013-2023)

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Medicinal product name, other

Levothyroxine

Study drug International non-proprietary name (INN) or common name

LEVOTHYROXINE

Anatomical Therapeutic Chemical (ATC) code

(H03AA01) levothyroxine sodium

levothyroxine sodium

Medical condition to be studied

Hypothyroidism

Population studied

Short description of the study population

The study will be carried out in BIFAP (http://www.bifap.org), a longitudinal population-based database managed by the AEMPS that contains data from the anonymised medical records of patients treated by primary care physicians (MAP) belonging to the Spanish National Health System (SNS).
Nine autonomous communities collaborate by providing data.
Currently, BIFAP includes health records of around 12 million patients covering almost 25% of the Spanish population, with an average follow-up of 8.5 years.
The BIFAP population is representative of the Spanish population in terms of age and sex.

Age groups

- Adults (18 to < 65 years)
- Adults (65 to < 75 years)
- Adults (75 to < 85 years)
- Adults (85 years and over)

Estimated number of subjects

100000

Study design details

Setting

Health records of around 12 million patients covering almost 25% of the Spanish population between 2013 and 2023.
1. Incident cohort of treated hypothyroidism: patients who receive levothyroxine treatment for the first time without a diagnosis of previous hypothyroidism or with a diagnosis of subsequent hypothyroidism. The date of

first prescription of levothyroxine will be the start date for follow-up to events of interest, and that person-time will be assigned to the incident cohort of hypothyroidism treated. See below for patients who are first diagnosed with hypothyroidism and then treated with levothyroxine.
2. Untreated incident hypothyroidism cohort: patients from the incident hypothyroidism cohort who receive a first diagnosis of hypothyroidism and without any levothyroxine dispensation during the entire follow-up period. The date of first diagnosis of hypothyroidism will be the start date for follow-ups to events of interest, and that person-time will be assigned to the incident cohort of untreated hypothyroidism.
Control population cohort: From the same study population where we identified the hypothyroidism cohort, a random sample of 4 individuals matched by each patient in the hypothyroidism cohort with the same year of birth and sex will be selected, assigning them the start date of their respective match (they will not have a history of hypothyroidism or substitution treatment before the start date for follow-ups to events of interest).

Comparators

Patients diagnosed of hypothyroidism and treated with levothyroxine
Patients diagnosed of hypothyroidism and not treated with levothyroxine
Control matched population

Outcomes

Thyroid function control
Atrial fibrillation
Heart failure
Vertebral fracture or crushing, fracture of the femur, pelvis and wrist
Osteoporosis and/or initiation of osteoporosis drugs
Affective disorders

Insomnia

Cognitive impairment

Data analysis plan

Incidence-prevalence measure: The incidence rate of total hypothyroidism, as well as treated and untreated hypothyroidism in each year of the study period will be estimated by dividing the number of incident cases identified throughout each year by the number of person-years of follow-up accumulated during this same year. We will also calculate the prevalence in each year of the study period.

Event of Interest Measure: We will estimate the incidence rates for each event by dividing the number of people with events by the total number of person-years of follow-up, stratified by age, sex, and study cohort, assuming a Poisson distribution to estimate the confidence intervals of these incidences.

In addition, we will perform a Kaplan and Meier survival analysis to study the cumulative risk of each event in the different cohorts throughout the study period. Next, a Cox proportional hazards multivariate regression model will be used to assess the association of each event with treated and untreated hypothyroidism adjusted for event-specific risk factors.

Data management

ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

Data sources

Data source(s)

BIFAP - Base de Datos para la Investigación Farmacoepidemiológica en el Ámbito Público (Pharmacoepidemiological Research Database for Public Health Systems)

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No