



ORIGINAL ARTICLE

Request of thyroid function tests from Primary Care in Spain[☆]



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KEYWORDS

Suitability;
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Abstract

Background and objectives: Laboratory tests are crucial for diagnosis and monitoring of thyroid disorders. It is therefore necessary to study the pattern and variability in requests of thyroid function tests.

The study objectives were to compare the inter-regional variability in the request of laboratory thyroid tests by general practitioners (GPs) in Spain, and to investigate the potential economic savings if the goals set for some suitability indicators were reached.

Methods: Test requests per 1000 inhabitants and test ratios (free thyroxine (FT4)/thyrotropin (TSH), free triiodothyronine (FT3)/TSH, thyroglobulin antibody (TgAb)/peroxidase antibody (TPOAb)) were compared between the different areas, according to their setting, location, and management. The resulting savings if each department achieved the goals for indicator (0.25 for FT4/TSH, 0.1 for FT3/TSH) were estimated.

Results: Seventy-six laboratories covering a population of 17,679,195 inhabitants participated in the study. TSH was requested significantly less in urban-rural areas, and the requests for

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[◇] The names of the components of REDCONLAB are available in Annex 1.

PALABRAS CLAVE

Adecuación;
Variabilidad clínica;
Laboratorio;
Pruebas de función
tiroidea

FT3/1000 inhabitants, FT3/TSH, and TgAb/TPOAb were higher in departments with private management. The savings generated if specifications for the ratios of related tests were met would be 937,260.5 €.

Conclusions: The high variability reported in requests for thyroid function and autoimmunity tests in Spain suggests the need for implementing strategies to improve use of such tests.

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Solicitud de pruebas de función tiroidea desde Atención Primaria en España**Resumen**

Antecedentes y objetivos: Las pruebas de laboratorio son cruciales en el diagnóstico y seguimiento de las disfunciones tiroideas, lo que hace necesario estudiar cuál es el patrón de su demanda y la variabilidad en la solicitud. Los objetivos del trabajo fueron comparar la variabilidad en la solicitud de pruebas de función y autoinmunidad tiroidea (tirotropina tiroxina libre [T4L], triyodotironina libre [T3L], anticuerpos frente a la tiroglobulina [TgAb] y anticuerpos antiperoxidasa [TPOAb]) por parte de los médicos de atención primaria entre diferentes departamentos de salud españoles, y calcular el potencial ahorro económico que supondría alcanzar las metas de algunos indicadores de adecuación descritos previamente en la literatura.

Métodos: Se compararon el número de pruebas por 1.000 habitantes y las ratios de pruebas relacionadas (T4L/TSH, T3L/TSH, TgAb/TPOAb) entre los diferentes departamentos en función de su ubicación, tipo de gestión y la región. Se calculó el ahorro generado si cada departamento alcanzara la meta propuesta en la literatura para los indicadores T4L/TSH (0,25) y T3L/TSH (0,1).

Resultados: Un total de 76 laboratorios que atienden a una población de 17.679.195 habitantes participaron en el estudio. La solicitud de TSH fue significativamente menor en los departamentos de salud rurales-urbanos y la solicitud de T3L, la ratio T3L/TSH y la ratio TgAb/TPOAb fueron mayores en los departamentos con gestión privada. El ahorro que se generaría si se cumplieran las especificaciones para las ratios de pruebas relacionadas ascendería a 937.260,5 €.

Conclusiones: La elevada variabilidad descrita en la solicitud de pruebas de función y autoinmunidad tiroidea en España hace necesario implementar estrategias para mejorar esta solicitud.

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Introduction

Thyroid dysfunctions (TDs) are the second leading cause of endocrine disease after diabetes mellitus.¹ These conditions are associated, among other complications, with increases in cardiovascular complications^{2,3} and psychiatric disorders.⁴ The early detection of TDs is therefore essential, because adequate treatment prevents patient damage and complications, thus improving the course of the disease.

TD diagnosis and monitoring is currently performed at primary care (PC), usually through communication and collaboration between endocrinologists and PC physicians (PCPs). Laboratory tests are crucial for diagnosis and monitoring. In fact, the diagnosis of subclinical TD stages is based on biochemical measurements, because clinical symptoms are highly non-specific.⁵

Errors in requests for laboratory tests and the interpretation of their results are the factors mainly responsible for errors in TD diagnosis,⁶ and the participation of laboratory staff in TD management is essential.⁷

The measurement of thyroid-stimulating hormone (TSH) levels is the key laboratory test for the diagnosis of TDs. However, it is difficult to find a balance between the suitability of and the promotion of the request for TSH testing as a tool for early TD detection.⁸ Different studies and clinical guidelines recommend either processing or not processing thyroid hormone levels based on TSH levels using consensus algorithms,^{2,9,10} and there are a number of recommendations regarding what constitutes an adequate request for TSH measurements.¹¹ However, in order to know to what extent the request for TSH levels should be promoted, we must first know the actual pattern of demand and the variability in the requests for thyroid function tests in Spain.

The first study objective was to compare and analyze the variability in the request for thyroid function tests among the different Spanish regions depending on the different organizational characteristics of the various healthcare departments, and the second objective was to investigate the potential savings to be derived from the achievement of the goals in some indicators of suitability previously reported in the literature.

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