



ORIGINAL ARTICLE

Care and economic impact of thyroid ultrasound examination at single visits to endocrinology clinics (the ETIEN 1 study)[☆]



Florentino Carral*, María del Carmen Ayala, Ana Isabel Jiménez, Concepción García

Unidad de Gestión Clínica de Endocrinología y Nutrición, Hospital Universitario Puerto Real, Cádiz, Spain

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KEYWORDS

Thyroid ultrasound;
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Abstract

Objective: Routine thyroid ultrasound examination in a single medical appointment is rarely performed in Spain. The objective of this study was to evaluate the care and economic impact of thyroid US examination in a single endocrine appointment.

Methods: A prospective, observational, descriptive study was conducted to analyze data from 2274 patients (mean age, 59 ± 16 years; 83% females) performed at least one thyroid US in a single visit to an endocrinology clinic during 2013 and 2014. The number of endocrine acts with thyroid US, single endocrine and US acts without review, and the change in the number of thyroid US requested by endocrinologists to the radiology department and total thyroid US examinations performed at the radiology department during the study period were assessed.

Results: In 2013 and 2014, 2558 endocrine acts with thyroid US were performed, of which 42.2% were single endocrine and US appointments without a second endocrine act, with estimated savings of €58,946.40. As compared to 2012, the number of thyroid US requested by endocrinologists to the radiology department decreased by 43.3% and 86.0% in 2013 and 2014 respectively, and total thyroid US performed by the radiology department decreased by 28.1% and 68.3% respectively, with estimated savings of €94,441.36.

Conclusions: Thyroid US examination in a single endocrine appointment allows for decreasing the number of both second endocrine acts and thyroid US examinations performed at the radiology department, thus reducing the number of unnecessary clinic visits and promoting considerable economic savings.

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* Corresponding author.

E-mail address: florencarral@hotmail.com (F. Carral).

PALABRAS CLAVE

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Acto único;
Ahorro de costes

Impacto asistencial y económico de la ecografía tiroidea en acto único en consultas de endocrinología (estudio ETIEN 1)**Resumen**

Objetivo: La realización de ecografía tiroidea en consultas en acto único está escasamente implantada en nuestro país. El objetivo de este estudio fue evaluar el impacto asistencial y económico de la utilización de la ecografía tiroidea en consultas de endocrinología en acto único.

Métodos: Se trata de un estudio prospectivo, observacional y descriptivo en el que se analizaron los datos de 2.274 pacientes (edad media: 59 +/- 16 años; 83% mujeres) a los cuales se les realizó al menos una ecografía tiroidea en acto único en consultas de endocrinología durante 2013 y 2014. Se evaluaron el número de consultas de acto único, consultas con alta directa y la variación en el número de ecografías solicitadas y realizadas en radiodiagnóstico durante el período de estudio.

Resultados: En 2013 y 2014 se realizaron 2.558 ecografías tiroideas en consultas de endocrinología en acto único, siendo el 42,2% consultas de alta directa sin revisión de resultados, con un ahorro estimado de 58.946,40 euros. En 2013 y 2014 se redujo el número de ecografías solicitadas a radiodiagnóstico en un 43,3% y 86,0%, respectivamente. De forma global se realizaron en radiodiagnóstico un 28,1% y un 68,3% menos ecografías tiroideas respecto al año 2012, estimándose un ahorro económico de 94.441,36 euros.

Conclusiones: La realización de ecografías tiroideas en consultas de endocrinología en acto único permite reducir tanto el número de revisiones de recogida de resultados como las ecografías tiroideas realizadas en radiodiagnóstico, lo cual disminuye el número de desplazamientos innecesarios de pacientes y favorece un ahorro económico considerable.

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Introduction

Thyroid disease currently represents one of the main reasons for referral to endocrinology outpatient clinics^{1,2} because of both the high prevalence of thyroid conditions in the general population^{3,4} and the expansion of hormone measurements and imaging procedures, which have led to a marked increase in the detection of both impaired thyroid function and incidentalomas in the thyroid gland.^{2,4} While approximately 4%–7% of the general population has palpable thyroid nodules, imaging tests reveal nodules in up to 20%–70% of the population.^{4,5}

Thyroid ultrasonography (US) is the most important imaging procedure for diagnosing thyroid disease.⁵ US has evolved in recent years thanks to the design of increasingly compact and manageable equipment with improved quality and definition. This has allowed for the increasing use of this equipment at clinics, rather than at radiodiagnosis units.^{6,7} The performance of thyroid US at single visits to endocrinology clinics might therefore be expected to lead to cost reductions by reducing the number of visits necessary—both to the radiodiagnosis unit for the performance of thyroid US and subsequently to the endocrinology clinic a second time to be given the results. However, this has not been confirmed by clinical studies.

Following the model of the Thyroid Core Group of the Mayo Clinic,⁸ the endocrinology unit of our center has been performing thyroid US since January 2013. Patients are only referred to the radiodiagnosis unit for more comprehensive US in the event of difficult or doubtful diagnosis. This model

of care at a single visit to the endocrinology clinic (with clinical, hormonal, and US assessment by the endocrinologist on the same day) is still uncommon in Spain^{6,7} and coexists with the predominant organizational model, in which patients are evaluated by the endocrinologist, who requests US or US-guided fine-needle aspiration (US-FNA) of the thyroid gland, which is then performed on a different day and whose results are assessed by the endocrinologist at another visit (thus patients usually have to attend the center on three different days).⁹ It is therefore necessary to assess whether thyroid US at a single visit to the endocrinology clinic allows for direct savings in costs by reducing the number of appointments, both to the radiodiagnosis unit and subsequently to endocrinology.

Methods

The Thyroid Ultrasound in Endocrinology (ETIEN) study was designed in January 2013 as a prospective, observational, descriptive study intended to assess the clinical results and the care and economic impact of the implementation of thyroid US at single visits to the endocrinology outpatient clinics of Hospital Universitario Puerto Real in Cádiz, Spain. The purpose of the ETIEN 1 substudy was to assess the economic impact of the use of thyroid US at a single visit during the first two years (2013 and 2014) of its implementation. The 2274 patients (mean age, 59 +/- 16 years; 83% females) seen at the endocrinology unit for thyroid disease who had at least one US performed at endocrinology clinics during

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