Actas Urol Esp. 2015;39(1):40–46

Actas Urológicas Españolas

www.elsevier.es/actasuro

ORIGINAL ARTICLE

Cost-effectiveness analysis of main diagnosis tools in women with overactive bladder. Clinical history, micturition diary and urodynamic study☆

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Received 26 November 2013; accepted 3 March 2014
Available online 9 December 2014

KEYWORDS
Cost-effectiveness;
Overactive bladder;
Micturition diary

Abstract
Objectives: The aim of the present clinical research is to analyze, in the light of the best scientific evidence, the performance and the cost of the main diagnostic tools for overactive bladder (OAB).
Methods: It is an exploratory transversal study in which 199 women diagnosed of OAB between 2006 and 2008 were selected and underwent to following prospective analyses: physical examination, urine analysis, micturition diary (MD) and urodynamic study (UDS). A percentage of 80% was assumed as highly sensitive and a diagnostic difference among tests of 10% would be considered clinically relevant. Tests' sensitivity for diagnosis of OAB was statistically established by two ways: isolated and combined. Besides, the direct and indirect costs of these tests performance were conducted. Cost-effectiveness study of clinical history (CH), MD and US for the diagnosis of OAB was performed.
Results: Overall sensitivity for OAB diagnosis is low for the 3 tests used in isolated way, whilst the combination of any two tests shows good overall sensitivity. The combination of CH and MD has appeared as the most cost-effective alternative to OAB diagnosis.
Conclusions: For OAB diagnosis, CH-DM combination shows the same sensitivity than the association of either of them with the UDS, but unlike to these, it shows the lowest cost.

☆ Please cite this article as: López-Fando L, Carracedo D, Jiménez M, de Vicente JMG, Martínez L, del Cañizo CG, et al. Análisis coste-efectividad de las principales herramientas diagnósticas en mujeres con vejiga hiperactiva: historia clínica, diario miccional y estudio urodinámico. Actas Urol Esp. 2015;39:40–46.

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2173-5786/$ – see front matter

PALABRAS CLAVE
Coste-efectividad;
Vejiga hiperactiva;
Diario miccional

Análisis coste-efectividad de las principales herramientas diagnósticas en mujeres con vejiga hiperactiva: historia clínica, diario miccional y estudio urodinámico

Resumen

Objetivos: El presente trabajo de investigación clínica pretende analizar a la luz de la mejor evidencia científica el rendimiento y el coste de las principales herramientas utilizadas en el diagnóstico de la vejiga hiperactiva (VH).

Metodos: Se trata de un estudio transversal exploratorio y analítico, en el cual se seleccionó una muestra de 199 mujeres diagnosticadas de VH entre los años 2006 y 2008, a las que se realizó de forma prospectiva: exploración física, análisis de orina, diario miccional (DM) y estudio urodinámico (EUD). Se asumió que un porcentaje de diagnóstico altamente sensible debería ser 80% y que una diferencia de diagnóstico del 10% entre las pruebas sería clínicamente relevante. Se determinó estadísticamente la sensibilidad de cada una de las pruebas de forma aislada y combinada para el diagnóstico de VH y una valoración de los recursos económicos directos e indirectos que conlleva su realización, analizándose el coste efectividad de la historia clínica (HC), DM y EUD para el diagnóstico de VH.

Resultados: La sensibilidad global para el diagnóstico de VH es baja para cualquiera de las pruebas utilizadas de forma aislada, mientras que la combinación de 2 pruebas cualesquiera presenta una buena sensibilidad global para su diagnóstico. La combinación de HC y DM es la alternativa más coste efectiva en el diagnóstico de VH.

Conclusiones: El uso de HC y DM es una combinación tan sensible para el diagnóstico de la VH como la asociación de cualquiera de ellas con el EUD, presentando además un menor coste económico.

Introduction

Overactive bladder (OAB) is a chronic and debilitating clinical condition with a great impact on quality of life (QoL)[1,2] and a high socioeconomic cost, although it is not associated with urinary incontinence (UI), since the most common symptom affecting the QoL of patients is urgency.

In the year 2012, the International Continence Society (ICS) modified the definition according to which OAB is diagnosed, with the following being established as its definition: ''the occurrence of voiding urgency with or without urgency urinary incontinence (UUI), usually accompanied by increased voiding frequency and nocturia, in the absence of proven infection or other previous pathology''.[3,4] Voiding urgency is defined as ''the perception of a clear and compelling desire to void, difficult to defer and with fear of leakage''.[5]

The establishment of urgency as the central symptom of OAB requires urologists to identify and reliably measure it in its quantitative and qualitative dimensions. The ability of current methods, medical history (MH), questionnaires and/or bladder diary (BD) and urodynamic study (UDS) to diagnose urgency has not been fully evaluated in the literature.

BD is currently the main tool used in clinical trials to assess OAB symptoms; however, it is little used in the standard practice of specialized units and not used in the primary care setting.[6] UDS is an invasive test which requires evaluation through skills and by trained specialists; its indication in patients with symptoms compatible with OAB is disputed, and although there are authors who consider it essential for diagnosis, others claim that it should be a test reserved for patients unresponsive to initial therapy or with a complex clinical picture.[7–9]

With regard to the economic impact of OAB, there are three aspects determining it: direct costs (related to care, attention, diagnosis and treatment), indirect (linked to the loss of wages by the patient and his/her caregivers and productivity loss) and intangible ones (value of pain and suffering and disease-related decline in the QoL). As a result, determining the economic cost of OAB is an extremely difficult task.[10,11]

In the year 2009, the economic and social cost of patients with OAB in the United States was published according to the frequency of occurrence of symptoms. Patients were classified into serious cases versus mild ones, with total management costs being similar in both groups, thus reaffirming the theory that the mildest cases also generate a significant socioeconomic cost.[12] There is, however, no evaluation study on the direct costs involved in the diagnostic process of OAB.

The rationale of the present clinical research study was to critically analyze the performance and cost of the different tools used in the diagnosis of OAB. The aim was to homogenize clinical practice with the maximum diagnostic performance, the lowest cost and the greatest benefit for patients.

Materials and methods

This is a cross-sectional exploratory and analytical study with the goal of analyzing the cost-effectiveness of the diagnostic process of idiopathic OAB (iOAB). The study population is comprised of women over the age of 18, from the north health area of the Madrid Health Service, referred to area or hospital consultations in the urology department between the years 2006 and 2008.