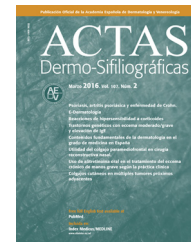




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## ORIGINAL ARTICLE

# Economic Impact of Atopic Dermatitis in Adults: A Population-Based Study (IDEA Study)<sup>☆</sup>



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### KEYWORDS

Atopic dermatitis;  
Resource usage;  
Costs

### Abstract

**Objective:** To determine resource usage and costs associated with atopic dermatitis in adults according to severity and comorbid conditions in daily clinical practice.

**Patients and methods:** We performed an observational, retrospective study based on a review of registries of patients aged  $\geq 18$  years who sought health care in 2013 and 2014 in an area of Catalonia, Spain, with a population of 215,634 persons. We established 3 classes of severity depending on the treatment prescribed. The variables evaluated were total comorbid conditions, concomitant/specific medication, and direct/indirect health care costs. The statistical analysis was based on multiple regression models. Statistical significance was set at  $P < .05$ .

**Results:** We included 6,186 patients with a diagnosis of atopic dermatitis (mean age, 47.1 years; women, 61.6%). We established 3 groups based on severity, as follows: mild ( $n = 3,445$  [55.7%]); moderate ( $n = 2,361$  [38.2%]); and severe ( $n = 380$  [6.1%]). Severe atopic dermatitis was associated with risk of presenting comorbid conditions ( $\beta = 0.192$ ), namely, asthma ( $\beta = 0.138$ ), depression ( $\beta = 0.099$ ), cardiovascular events ( $\beta = 0.087$ ), obesity ( $\beta = 0.085$ ), and smoking ( $\beta = 0.025$ );  $P < .001$ . Costs reached €9.3 million (health care costs, 75.5%; loss of productivity, 24.5%), with an average unit cost of €1,504 per year. The corrected average unit cost (ANCOVA) was greater in severe atopic dermatitis compared with moderate and mild disease (€3,397 vs €2,111 vs €885;  $P < .001$ ), respectively.

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**PALABRAS CLAVE**

Dermatitis atópica;  
Uso de recursos;  
Costes

**Conclusions:** Severe atopic dermatitis generates considerable usage of health care resources and high costs for the National Health System. These are in proportion with the severity of the disease. General comorbid conditions and asthma were the factors with the greatest impact on health care costs.

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### Impacto económico de la dermatitis atópica en adultos: estudio de base poblacional (estudio IDEA)

#### Resumen

**Objetivo:** Determinar el uso de los recursos y los costes de la dermatitis atópica (DA) en adultos según su gravedad y las comorbilidades asociadas en situación de práctica clínica habitual.

**Pacientes y métodos:** Se efectuó un diseño observacional retrospectivo realizado a partir de la revisión de registros de pacientes  $\geq 18$  años que demandaron asistencia durante 2013-2014 en un área geográfica de Cataluña con una población de 215.634 personas. Se constituyeron 3 grupos de gravedad en función del tratamiento prescrito. Las variables evaluadas fueron el conjunto de comorbilidades, la medicación concomitante/específica; y los costes sanitarios directos/indirectos. El análisis estadístico se elaboró mediante modelos de regresión múltiple,  $p < 0,05$ .

**Resultados:** Se reclutaron 6.186 sujetos con diagnóstico de DA (edad-media: 47,1 años; mujeres, 61,6%). En función de la gravedad de la DA se consideraron 3 grupos; el 55,7% leve ( $n = 3.445$ ), el 38,2% moderada ( $n = 2.361$ ) y el 6,1% grave ( $n = 380$ ). La DA grave se asoció a la probabilidad de presentar comorbilidades ( $\beta = 0,192$ ); específicamente: asma ( $\beta = 0,138$ ), depresión ( $\beta = 0,099$ ), eventos cardiovasculares ( $\beta = 0,087$ ), obesidad ( $\beta = 0,085$ ) y hábito tabáquico ( $\beta = 0,025$ ),  $p < 0,001$ . El coste ascendió a 9,3 millones de euros (costes sanitarios: 75,5%; pérdidas de productividad: 24,5%), con un promedio/unitario de 1.504 euros/año. Los promedios/unitarios corregidos (ANCOVA) fueron mayores en la DA grave en comparación con la moderada y la leve (3.397 vs 2.111 y 885 euros, respectivamente;  $p < 0,001$ ).

**Conclusiones:** La DA grave se asocia a una elevada utilización de recursos sanitarios y costes para el Sistema Nacional de Salud proporcional a la gravedad de la dermatosis. La comorbilidad general y el asma fueron los factores con mayor impacto asociado al coste sanitario.

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## Introduction

Atopic dermatitis (AD) is a recurrent chronic inflammatory disease of the skin.<sup>1</sup> Its morphology varies with the patient's age, although recurrent forms are predominant, and the most common symptom is pruritus.<sup>2</sup> The etiology of AD is complex, involving genetic factors and a combination of allergic factors (80% of patients present increased levels of immunoglobulin E) and nonallergic factors (epidermal barrier dysfunction, biological factors, and environmental factors).<sup>1-4</sup> AD affects around 10%-15% of children and 2%-7% of adults, especially in developed countries.<sup>2,5,6</sup> Fifty percent of cases resolve during adolescence, and the disease can persist in up to 20% of adults.<sup>1</sup> The incidence is higher in women, although more males are affected during childhood. Moderate to severe forms account for around 10%-20% of all cases of AD.<sup>1,2</sup>

AD generates a considerable psychosocial burden for patients and their families.<sup>7</sup> Prognosis is poorer in patients with the following characteristics: a family history of AD, late onset, disseminated atopic dermatitis during childhood,

female sex, and association with other allergic diseases (asthma and rhinitis).<sup>1-4</sup> At present, topical corticosteroids are considered the cornerstone of pharmacologic treatment in moderate cases, whereas severe cases are treated with phototherapy and systemic immunomodulators such as ciclosporin A, methotrexate, mycophenolate mofetil, or azathioprine.<sup>2,4</sup> However, ongoing clinical phase III clinical trials in patients with moderate to severe disease are assessing biologics targeting specific aspects of the pathogenic process.<sup>8,9</sup>

AD generates a high cost burden for patients and their families.<sup>10</sup> However, since most studies only evaluate the cost of drug therapy, there is a paucity of evidence, including data on resource usage and costs associated with AD in Spain.<sup>11,12</sup> Moreover, there is a growing need for naturalistic studies on the real clinical conditions of health care interventions that appropriately reflect the flow of patients through the health system, consumption of health care and social resources, and the impact on comorbidities. The objective of the present study was to determine the usage of resources and costs

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