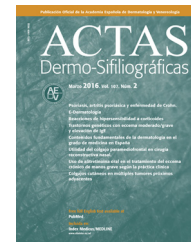




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ORIGINAL

Allergic Contact Dermatitis Due to Cosmetics: A Clinical and Epidemiological Study in a Tertiary Hospital[☆]



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KEYWORDS

Allergic contact dermatitis;
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Fragrances;
Paraphenylenediamine

Abstract The incidence of allergic contact dermatitis (ACD) to cosmetics in the general population is rising with the increasing use of cosmetic products and their proliferation and diversification. The aims of this study were to determine the prevalence of ACD to cosmetics in our setting, analyze changes over time, describe the clinical and epidemiological features of this allergic reaction, and identify the allergens and cosmetics involved. We performed a prospective study at the skin allergy unit in Hospital General Universitario de Valencia in Spain between 2005 and 2013 and compared our findings with data collected retrospectively for the period 1996 to 2004. The 5419 patients who underwent patch testing during these 2 periods were included in the study. The mean prevalence of ACD to cosmetics increased from 9.8% in the first period (1996-2004) to 13.9% in the second period (2005-2013). A significant correlation was found between ACD to cosmetics and female sex but not atopy. Kathon CG (blend of methylchloroisothiazolinone and methylisothiazolinone), fragrances, and paraphenylenediamine were the most common causes of ACD to cosmetics during both study periods, and acrylates and sunscreens were identified as emerging allergens during the second period.

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PALABRAS CLAVE

Dermatitis alérgica de contacto;
Cosméticos;
Kathon CG;

Dermatitis alérgica de contacto a cosméticos, estudio clínico-epidemiológico en un hospital terciario

Resumen La dermatitis alérgica de contacto (DAC) a cosméticos es una dolencia con una incidencia creciente en la población, paralelamente a la generalización del uso de cosméticos en la sociedad, así como a su proliferación y diversificación.

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Fragancias;
Parafenilendiamina

El objetivo del estudio es determinar la prevalencia de DAC a cosméticos en nuestro medio, analizar su evolución temporal y sus características clínico-epidemiológicas, así como definir los alérgenos y los cosméticos implicados.

Se ha realizado un estudio prospectivo durante los años 2005-2013 en la Unidad de Alergia Cutánea del Hospital General Universitario de Valencia, y se ha comparado de forma retrospectiva con el periodo previo de 1996-2004.

Se ha incluido a 5.419 pacientes estudiados con pruebas epicutáneas durante el periodo total del estudio. La prevalencia media de DAC a cosméticos ha aumentado de 9,8% en el periodo 1996-2004 a 13,9% en el periodo 2005-2013. La DAC a cosméticos se ha correlacionado con el sexo femenino, pero no con la atopia. El kathon CG (mezcla de metilcloroisotiazolinona y metilisotiazolinona), las fragancias y la parafenilendiamina (PPDA) se han mantenido como las causas más frecuentes, aunque en los últimos años los acrilatos y los filtros solares han sido alérgenos emergentes.

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Introduction

In today's society, physical beauty is more strongly pursued than ever and is considered synonymous with success and happiness. The associated social and cultural pressure transmitted and boosted by the media and advertising has led to mass—and even pathological—consumption of multiple beauty products and services. Cosmetics are the most important products on the beauty market, and their growth and diversification seem unstoppable.¹ However, despite being subject to strict legislation,² cosmetics are not free from adverse reactions.

Few data are available on the real incidence of adverse reactions to cosmetics, which, although estimated at 12% in the general population, has reached 47% in patients referred for patch testing.³ Adverse reactions to cosmetics most commonly manifest as contact dermatitis, with irritant contact dermatitis the most frequent form. However, allergic contact dermatitis (ACD) is of particular interest because of the severity of the symptoms it produces, the need to identify the allergen before the condition can be cured, and the risk of cross-reactions.⁴

The prevalence of ACD to cosmetics in patients referred for patch testing was traditionally reported to be 2%-4%, although more recent studies point to a progressive increase in these values.⁵

The objectives of the present study were to analyze the prevalence of ACD to cosmetics and the progress of the condition over time, describe the clinical and epidemiological features of the reaction, and identify the allergens and cosmetics involved.

Material and Methods

We included all patients who underwent patch testing at the Skin Allergy Unit of Hospital General Universitario de Valencia, Valencia, Spain between January 1996 and December 2013. We performed a prospective study during 2005-2013, the results of which were compared with those from the preceding period (1996-2004). We recorded epidemiological variables (sex, age, profession, atopy), clinical variables (skin lesions, duration, location, initial diagnosis), and variables associated with the examinations (patch testing, positive patch test results, relevance, cosmetic products,

and source of sensitization). All patients underwent patch testing with the standard series of the Spanish Contact Dermatitis and Skin Allergy Research Group (Martí Tor). Depending on the findings from the clinical history, additional testing was performed with specific allergen series (Martí Tor) or with the patient's own products. Readings were taken at 48 and 96 hours following the recommendations of the International Contact Dermatitis Research Group.

A descriptive statistical analysis was performed to determine the general prevalence trends and sociodemographic profiles of patients with ACD to cosmetics. Using contingency tables and significance testing, we also identified the epidemiological and diagnostic characteristics associated with the development of ACD to cosmetics.

Results

The study population comprised 5419 patients. Table 1 shows data for all the patients who underwent patch testing, patients with ACD, and patients with ACD to cosmetics.

The mean prevalence of ACD to cosmetics was 11.6% in patients referred for patch testing. This increased from 9.8% during the first period to 13.9% in the second period, with a peak value of 18.9% in 2013 (Fig. 1). The frequency of cosmetics as the cause of ACD increased from 33.1% during the first period to 50.8% during the second period.

As for the epidemiologic profile, 75.9% of patients were women. Female sex was significantly associated with development of ACD to cosmetics. Men scarcely accounted for one-quarter of cases, although a slight increase was observed in the second period. The mean age of patients with ACD to cosmetics was 41.8 years. Atopy was also recorded in 11.7% of patients. The result of the chi-square test ($P < .001$) confirmed the inverse relationship between ACD to cosmetics and atopy: only 4.5% of all atopic patients were allergic to cosmetics, whereas 14.7% of those with no history of atopy had ACD to cosmetics. The occupations most closely associated with ACD to cosmetics were homemaker (28.8%), student (10.7%), and administrative worker (10.2%). Grouping by academic qualifications revealed a statistically significant association between low-grade professional qualifications and ACD to cosmetics ($P < .001$, chi-square).

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