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## ORIGINAL ARTICLE

# Feasibility and Reliability of the Spanish Version of the Leeds Revised Acne Grading Scale

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### KEYWORDS

Acne vulgaris;  
Diagnosis of acne;  
Acne classification;  
Validation of scales

### Abstract

**Background:** Although there are more than 25 acne grading systems, there is no consensus on which is most appropriate. Unification of the classifications is recommended in order to facilitate therapeutic decisions.

**Objective:** To assess the feasibility and reliability of the Spanish version of the Leeds revised acne grading (LRAG) scale in patients with acne vulgaris in Spain.

**Patients and methods:** We conducted a prospective, multicenter, observational study in Spain, including patients with acne affecting at least 1 of 3 regions: face, back, or chest. Patients were assessed using the LRAG scale and lesion counting. Changes in the scores were determined at 4-6 weeks, and were correlated with the lesion count. Physicians were asked 4 questions regarding difficulty using the scale and the time employed.

**Results:** A total of 259 sites of acne were assessed in 239 patients at 57 centers. The majority of physicians (89.5%) stated that the LRAG scale was not difficult to use. The mean administration time was 3.12 min. Cross-sectional validity ( $P < .012$  for the face,  $P < .001$  for the back and chest), longitudinal validity ( $P < .0001$  for the face, back, and chest), and intraobserver and interobserver reliability (Cronbach  $\alpha > 0.8$ ) were significant for inflammatory lesions in all regions. Sensitivity to change was demonstrated for lesions in all regions, based on the correlation between the difference in severity and the number of lesions recorded by the LRAG, and the difference in the lesion count between baseline and follow-up.

**Conclusion:** The Spanish version of the LRAG scale is a practical and reliable tool and is sensitive to change. It is a valid tool for the objective assessment of the severity of acne.

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**PALABRAS CLAVE**

Acné vulgar;  
 Diagnóstico de acné;  
 Clasificación de acné;  
 Validación de escalas

## Factibilidad y fiabilidad de la versión española de la escala revisada de gravedad de Leeds (LRAG) para pacientes con acné

**Resumen**

**Introducción:** Se describen más de 25 métodos para valorar la gravedad del acné y, aunque no hay consenso sobre una escala, se recomienda unificar su clasificación para facilitar las decisiones terapéuticas.

**Objetivos:** Validar la factibilidad y fiabilidad de la escala revisada de gravedad de Leeds (LRAG) en pacientes con acné vulgar en España.

**Material y métodos:** Estudio observacional prospectivo multicéntrico español que evaluó mediante la escala LRAG y el recuento de lesiones a pacientes con acné en al menos una de tres localizaciones (cara, pecho o espalda). Se analizaron los cambios en la puntuación a las  $5 \pm 1$  semanas y se correlacionaron con el recuento de lesiones. El clínico respondió 4 preguntas sobre dificultad y tiempo de uso de la escala.

**Resultados:** Fueron evaluadas 259 localizaciones de acné en 239 pacientes y en 57 centros asistenciales. El 89,5% [IC: 85-92,9%] de los médicos opinaron que la escala se usó sin dificultad y su tiempo medio de administración fue de 3,12 min. La validez transversal ( $p < 0,012$  facial,  $p < 0,001$  espalda y pecho), validez longitudinal ( $p < 0,0001$ ) y fiabilidad intra e interobservador (alfa de Cronbach  $\geq 0,8$ ) de la escala fue significativa en todas las localizaciones. En relación a sensibilidad al cambio de la escala, las lesiones observadas en todas las localizaciones en el seguimiento dependen de la diferencia de gravedad registrada por la escala LRAG y el recuento de lesiones basales.

**Conclusiones:** La versión española de la escala LRAG es factible, fiable, sensible y constituye una herramienta válida para objetivar clínicamente la gravedad del acné.

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**Introduction**

Acne vulgaris, with a lifetime prevalence of between 70% and 90%,<sup>1</sup> is the most common dermatologic disorder. The vast majority of patients with acne have facial lesions but approximately half also have acne on the chest or on the chest and back. Diagnosis is clinical and also subjective because it is observer-dependent.<sup>2</sup> The need for an accurate, reproducible, and rapid system for grading acne that could be used in clinical practice became apparent at the end of the 1970s.<sup>3</sup> Currently, however, there are over 25 different methods for assessing acne severity,<sup>4</sup> most of which have been developed independently and use different terminology and scales,<sup>5</sup> explaining the lack of standardization that has been noted.<sup>6</sup> Furthermore, in clinical guidelines on the management of acne vulgaris, there is no consensus on which grading or classification system is the most appropriate.<sup>7</sup>

No Spanish studies to date have analyzed currently available acne grading systems, and there is also a lack of consensus in Spain regarding their use in clinical practice. In this context, the VEGA (Validación Escalas de Gravedad del Acné) study set out to validate the feasibility and reliability of the Leeds Revised Acne Grading (LRAG) scale in patients with acne vulgaris.

**Materials and Methods**

We performed a prospective, multicenter, observational study in Spain in which we included patients of any age or sex who visited the dermatology departments at the participating hospitals complaining of acne on

the face, chest, or back. All the patients were given an information leaflet and signed an informed consent form prior to participation. Excluded were patients with highly localized acne, concomitant dermatologic disorders, or physical features that would have made it difficult to assess the severity of their acne (eg, beards, tattoos, and very long hair). Recruitment was consecutive. All the patients were interviewed by their regular dermatologists, who completed a case report form for each patient and each acne site (face, chest, and back) at a baseline visit and follow-up visit (at  $5 \pm 1$  weeks). At these visits, the dermatologist took a photograph of each of the acne sites recorded for the patient. In some patients, different acne sites were evaluated in the 2 visits; separate data entries were generated for each site.

The aim of the VEGA study was to validate the LRAG scale in Spain. Accordingly, assessment using this system was the main variable of interest. The LRAG scale is a visual system that asks the observer to compare a patient's lesions with photographic standards for 3 sites: the face, the back, and the chest.<sup>8,9</sup> The criteria used to assess severity are degree of inflammation, lesion type and size, and associated erythema. To assess facial acne, 13 photographs showing 12 levels of severity, from grade 1 (least severe) to 12 (most severe), are used. For instance, patients with atypical acne (sporadic and asymmetric nodular lesions) are classified as having grade 12 acne. The severity of lesions on the chest and the back is assessed using 8 photographs graded from 1 to 8. For patients with predominantly noninflammatory acne, O'Brien et al<sup>9</sup> proposed using a scale comprising 3 photographs of noninflammatory lesions of increasing severity (grades 1 to 3).

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