

Clinical and histopathological analysis of inflammatory follicular papules on the face

Kim Jung Eun, MD, PhD, Department of Dermatology, St Paul's Hospital, College of Medicine, Catholic University of Korea, Seoul, South Korea; Won Joon Choi, MD, Department of Dermatology, St Paul's Hospital, College of Medicine, Catholic University of Korea, Seoul, South Korea; Hoon Kang, MD, PhD, Department of Dermatology, St Paul's Hospital, College of Medicine, Catholic University of Korea, Seoul, South Korea

Facial inflammatory follicular disorders, including rosacea, perioral dermatitis, and adult acne, have no definite diagnostic criteria. Those diseases show similar clinical features and all have chronic and relapsing disease courses. Dermatologists often encounter difficulty in making a decision on the diagnosis and treatment. The objective of this study is to investigate the clinical and histopathologic features of facial inflammatory follicular papules in Korean patients. A total of 87 patients evaluated over 10 years were retrospectively reviewed. The most frequent inflammatory follicular diseases were rosacea (44.8%), seborrheic dermatitis (13.8%), perioral dermatitis (11.5%), chronic deep folliculitis (6.9%), adult acne (4.6%), pityrosporum folliculitis (2.2%), viral folliculitis (2.2%), acute superficial folliculitis (1.1%), and demodicidosis (1.1%). We found a broad overlap in the clinical and histologic features of lesions with each other, and in many cases clinical impressions were inconsistent with their final diagnosis. Histopathologically, epidermal change of rosacea was comparable to those in perioral dermatitis. Severe degree of telangiectasia showing bizarre geographic patterns were mostly seen in the specimens of rosacea patients. Sebaceous hyperplasia and fibrosis was frequently shown in various chronic inflammatory follicular papules. The diagnosis of facial inflammatory follicular papules may be challenging, because many diseases often show similar clinical features and have a broad overlap in histologic features. Our clinicopathologic findings would aid in the differential diagnosis of inflammatory follicular diseases.

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Comparative efficacy and safety of ivermectin cream 1% and metronidazole cream 0.75% in the treatment of papulopustular rosacea

Alain Taieb, MD, Hôpital Saint-André, Service de Dermatologie, Bordeaux, France; Thomas Ruzicka, MD, Ludwig Maximilian University, Department of Dermatology and Allergy, Munich, Germany; John Berth-Jones, MD, Dermatology Clinical Research Unit, Department of Dermatology, Nuneaton, United Kingdom; Marie-Hélène Peirone, Galderma Research & Development, SNC, Sophia Antipolis, France; Jean Jacovella, MD, Galderma Research & Development, SNC, Sophia Antipolis, France

Introduction and objectives: This study was designed to demonstrate superiority of once-daily ivermectin 1% cream (IVM 1%) compared to twice-daily metronidazole 0.75% cream regarding percent reduction of inflammatory lesions in subjects with moderate to severe papulopustular rosacea, with the objectives of generating efficacy and safety data.

Materials and methods: In this phase III, investigator-blinded, randomized, parallel group study, subjects applied IVM 1% cream once daily or metronidazole 0.75% cream twice daily over 16 weeks. Efficacy assessments were inflammatory lesion counts and Investigator's Global Assessment (IGA) based on a 5-grade scale. Subject's global improvement of rosacea was also assessed by using a 6-grade self-evaluation questionnaire at week 16. Safety assessments included incidence of adverse events (AEs) and tolerability measurements.

Results: A total of 962 subjects were randomized in the study (478 in the IVM 1% cream once-daily group and 484 in the metronidazole 0.75% cream twice-daily group). At week 16, IVM 1% cream was significantly superior to metronidazole 0.75% cream in terms of percent reduction from baseline in inflammatory lesion counts (83.0% vs. 73.7%; $P < .001$), observed as early as week 3 (LOCF) and continuing through week 16. Success rate defined as an IGA of 0 (subjects "clear") or IGA of 1 (subjects "almost clear") confirmed superiority of IVM 1% cream: 84.9% vs. 75.4%, respectively ($P < .001$). More subjects applying IVM 1% cream rated their global improvement as "excellent" or "good," compared to metronidazole 0.75% cream (85.5% vs. 74.8%). Incidence of AEs was comparable between groups (32.4% vs. 33.1% of subjects in the IVM 1% and metronidazole 0.75% groups, respectively), and local tolerability was better for IVM 1% cream.

Summary: Ivermectin cream 1% was significantly superior to metronidazole 0.75% cream and achieved high patient satisfaction.

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Digital photography study provides insight about how people with acne scars are perceived

Brigitte Dreno, MD, PhD, Hotel Dieu, Nantes, France; Jerry Tan, MD, University of Western Ontario, Windsor, Ontario, Canada; Sewon Kang, MD, Johns Hopkins School of Medicine, Baltimore, MD, United States; Vicente Torres Lozada, MD, Hospital Juárez, Mexico City, Mexico; Vincenzo Bettoli, MD, University of Ferrara, Ferrara, Italy; Alison Layton, MBChB, Harrogate District and Trust, Harrogate, United Kingdom

Background: Facial atrophic acne scarring affects ~ 40% of patients with active acne. Scars arise during the course of acne, and can accompany all levels of inflammatory acne severity. This study evaluated the perceptions of the general public on those with acne scars using a similar method to that used in a 2009 study of perception of acne sufferers conducted by the American Acne and Rosacea Society.

Methods: An online survey presented facial images of models with no scars and with digitally superimposed acne scars. Respondents (teenagers and adults with or without scars) were asked about their impressions of 3 randomly selected photos inclusive of nonscarred and scarred images. The survey was administered in 6 countries (USA, UK, Japan, Germany, France, and Brazil).

Results: A total of 4618 responses were obtained (USA – 1039; UK – 714; Japan – 701; Germany – 703; France – 736, Brazil – 725). The results were consistent between countries; when viewing images of models with acne scars, respondents reported that the first noticeable feature was the skin; they also indicated that the scarred person needed to improve their skin care habits. Scarred individuals were more likely to be categorized as shy or stressed, and less likely to be perceived as successful, happy, confident, healthy, reliable, or a leader. The majority of adults (>66%) affected by acne scars reported willingness to pay money to eradicate the blemishes as well as greater likelihood of spending money on an effective treatment than on high-end apparel or shoes.

Conclusions: Facial images with acne scarring engendered unfavorable initial impressions and were associated with negative emotional and personal attributes.

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Distribution of TLR-2 and CD1d on epidermis and adnexal structures in adult female acne

Marco Alexandre Dias da Rocha, MD, UNIFESP, São Paulo, Brazil; MiotHelio, PhD, UNESP, São Paulo, Brazil; Edileia Bagatin, PhD, UNIFESP, São Paulo, Brazil

Background: The TLR family comprises a group of cell surface receptors and the subtype 2 is able to recognize the *Protonibacterium acnes*. Its activation leads to trigger an innate inflammatory response with the release of various cytokines. The CD1d receptors are glycoproteins expressed on the surface of various human antigen-presenting cells. CD1d-presented lipid antigens activate a special class of T cells, known as natural killer T (NKT) cells, through the interaction with the T-cell receptor present on NKT membranes. When activated, NKT cells rapidly produce Th1 and Th2 cytokines, typically represented by interferon-gamma and IL-4 production. Previous studies reported that keratinocytes are able to function as non-conventional antigen-presenting cells with the help of CD1d. The lower CD1d expression can reduce the action of NKT against lipidic or bacterial antigen present in the epidermis and follicle as *P. acnes*. Previous studies fail to confirm the precise localization of these receptors at inflammatory lesions.

Objective: To increase knowledge in the pathogenesis of adult acne in women this study was designed to characterize the distribution of the receptors TLR2 and CD1d on epidermis and adnexal structures in inflammatory lesions.

Methods: Thirty-four samples of inflammatory lesions obtained by skin biopsy in adult women adult acne and 10 samples from age-matched controls were studied by immunohistochemical techniques. Anti-TLR2 polyclonal antibodies and anti-CD1d monoclonal antibodies were used to determine the precise localization of CD1d and TLR2.

Results: Immunohistochemical analysis showed that in acne lesions, TLR-2 receptors were found at suprabasal layer, at infundibular zone and with high expression in the sebaceous gland. The CD1d receptors were found on high expression beneath the corneal cells, at infundibular zone and with low expression in sebaceous gland area. These data were statistically analyzed.

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