

# THE EFFICACY OF 2% HYDROGEN PEROXIDE GEL FOR ACNE VULGARIS TREATMENT

Dzilinska K.<sup>1</sup>, Kisiel K<sup>1</sup>, Pasikowska M.<sup>1</sup>, Jakimiuk E.<sup>2</sup>, Debowska R.<sup>1</sup>, Ciescinska C.<sup>4</sup>, Vincent C.<sup>3</sup>, Eris I.<sup>1</sup>

<sup>1</sup>Dr Irena Eris Cosmetic Laboratories, Centre For Science and Research, Piaseczno, Poland, <sup>2</sup>Dr Irena Eris Cosmetic Laboratories, Technological Department, Piaseczno, Poland,, <sup>3</sup>Dermatology and Aesthetic Surgery, Private Practise, Piaseczno, Poland, <sup>4</sup>Private Practise, Beauty 4 You, Bydgoszcz, Poland

## INTRODUCTION AND OBJECTIVE

Acne vulgaris is a common chronic skin disease involving blockage and/or inflammation of pilosebaceous units. Acne vulgaris most commonly occurs during adolescence, affecting an estimated 80–90% of teenagers in the Western World. Nowadays, however, we can observe increasing number of acne vulgaris in adults as well. Hydrogen peroxide is a chemical compound that finds use as a strong oxidizer, bleaching agent and disinfectant. Cosmetic industry offers a wide range of products for this skin condition, however hydrogen peroxide has not been very popular so far. **The purpose of this study was to evaluate the safety and anti-inflammatory, anti-bacterial and smoothing effects of topical use of 2% hydrogen peroxide gel.**

## MATERIALS AND METHODS

The study was conducted on 24 volunteers with acne vulgaris between age 16-50 years old. Volunteers tested punctate application of 2% gel on skin lesions (pustules, papules). The product was used 3-4 times daily for the first two days, and then twice daily for a week. Skin condition was analyzed after 24h, 48h, 72h and at the end of the 7 day period with device that provides analysis of skin condition using multi-spectral lighting and peer-group comparison algorithm for the measurement of hyperpigmentation, number of porphyrins and texture of the skin. Dermatologists were evaluating skin condition of patients using 9 point analogue scale before and after one week of treatment with tested products. Volunteers or their legal guardians were evaluating safety and efficacy of products in the questionnaire survey after one week of product usage.

## RESULTS

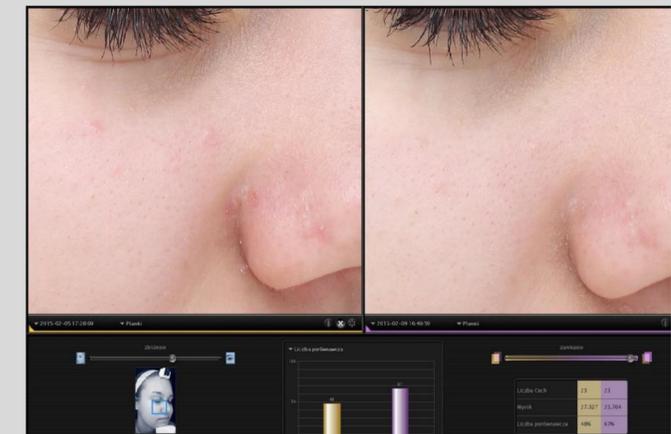
During VISIA Complexion analysis we observed **gradual decrease of porphyrins** - by **7%** after 24h, and **19%** after 7 days, **decreased hyperpigmentation** by **9%** after 48h, **improvement in skin texture** by **14%** after 24h and by **8%** after 48h. **Doctor's assessment** after 7 days: reduction of skin inflammation in **95%** cases, **smoothing** effect in **77%** with good tolerance in 96% of patients. In the questionnaire survey 86% patients observed skin improvement, and **91%** would use in the future.

## CONCLUSION

Results of the presented study demonstrated that systematic and punctate application of 2% hydrogen peroxide gel significantly reduces skin inflammation, smoothes and accelerates healing process as well as demonstrates great product tolerance. **2% hydrogen peroxide can supplement pharmacological treatment of acne vulgaris with mild to moderate course of disease.**

## RESULTS

Fig. 1 Patient T2-06 after 4 days of product usage



Self-evaluation of product after one week of usage

Patient self assessment	Yes	No	Can't assess
Reducing existing acne lesions, inflammation, pain	86%	14%	0%
Preventing from new acne lesions	55%	36%	9%
Prevent from new pustules	73%	14%	14%
Prevent from postinflammatory discoloration	41%	18%	41%
Sooths irritations and calms the skin	86%	9%	5%
Accelerate healing process	77%	5%	18%
Good tolerance for irritated skin	64%	5%	32%
Non-comedogenic effect	59%	0%	41%
Smoothes the skin	77%	5%	18%
Peeling effect	32%	23%	45%

Fig.2 Patient T2-10 after two days of product usage

