



Study of Effectiveness between 20% Azelaic Acid with 1064-nm Nd:YAG Picosecond Laser and Azelaic Acid Alone in Treatment of Melasma in Thai Female Patients, Split-face Study

Natthika Klaisung^{*1,2}, Praneet Sajjachareonpong², Sirintip Thongkaow², Pattanan Dornphai², and Tanongkiet Tienthavorn²

¹College of Medicine, Rangsit University, Bangkok, Thailand

²Institute of Dermatology, Bangkok, Thailand

*Corresponding author, E-mail: natthika.proud@gmail.com

Abstract

Melasma is one of the most concerning skin pigmentation disorders, especially in dark type skinned patients, which can be triggered by UV radiation, occupation, female gender, contraceptive use, or hormonal therapy. This clinical trial is a split-face study evaluating the effectiveness of picosecond laser in melasma treatment combined with topical azelaic acid compared with applying topical azelaic alone. The primary outcome of this study is the Hemi-MASI score, whereas the secondary outcome is demographic data, physicians' global assessment, patient satisfaction score, and side effects. Twenty Thai female patients diagnosed with bilateral symmetrical malar-type melasma aged between 18 and 65 were enrolled in the study. The patients were treated with three sessions of low-fluence 1064-nm Nd: YAG picosecond laser every two weeks, combined with topical azelaic acid twice daily on the right side of the face. In contrast, the left side was treated with topical azelaic acid twice daily for 16 weeks. The mean Hemi-MASI decrease is 3.52%, 9.38%, and 19.94% on the laser combined with azelaic side, while there are 1.93%, 7.89%, and 16.73% at the 8th, 12th, and 16th weeks, respectively, on the azelaic alone side. There were no severe side effects from both picosecond laser and azelaic acid, and they can be relieved without treatment. Researchers can recruit more volunteers and adjust the protocol by using other topical melasma medications in further research. Even though the mean Hemi-MASI score between the two sides is not statistically significantly different ($p > 0.05$), the general clinical result demonstrates the improvement.

Keywords: Azelaic Acid, Melasma, 1064-nm Nd:YAG Picosecond Laser