

## ABSTRAK

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### Abstract

**Background:** Melasma is a skin pigmentation disease characterized by symmetrical hyperpigmentation patches of irregular borders on areas frequently exposed to sunlight, affecting people with dark skin types, especially Fitzpatrick skin types 3-4. Intense Pulsed Light (IPL) uses light with wavelengths ranging from 515 to 1200 nm and specifically targets melanosomes with the advantage of treating dermal and epidermal type melasma. (5) (6) In previous studies, the MASI score was found to decrease in the IPL intervention, however, the source of the pigmentation parameters of the skin analyzer is still limited.

**Objective:** to examine the effect of Intense Pulsed Light Therapy with a wavelength of 560 nm in melasma pigmentation repair and assessed with MASI *score* and skin analyzer.

**Method:** This research is a type of analytic research with randomized controlled clinical trial, single-blind. The number of research subjects was 13 subjects in the control group and 13 subjects in each treatment group, so that the total number of subjects was 65 people. The treatment group included: control, 1 session of IPL, 2 sessions of IPL, 3 sessions of IPL, and 4 sessions of IPL. Normality test using the Kolgomorov-Smirnov test. The relationship between IPL and MASI score and IPL with a skin analyzer was tested using repeated ANOVA. Correlation between IPL frequency with MASI score and skin analyzer pigmentation parameter was analyzed using Rank Spearman correlation.

**Results:** The study involved 13 patients in 4 treatment groups of 560 nm IPL and 13 control patients. The results showed a significant difference in the skin analyzer pigmentation parameters in the second IPL treatment ( $\rho=0.028$ ) followed by the first IPL session ( $\rho=0.042$ ) with the strength of the relationship inversely proportional to each. In repeated ANOVA, a value of 0.303 ( $>0.05$ ) means that the assumptions are met, so it can be concluded that there is a difference in the MASI *scores* between the first to fourth IPL sessions.

**Conclusion:** The 560 nm IPL treatment provides changes in melasma pigmentation as evidenced by the decrease in pigmentation in melasma, the more routine IPL 560 nm sessions are undertaken.

**Keywords:** melasma, IPL, MASI *score*, skin analyzer, facial hyperpigmentation