

ABSTRACT

Background: Melasma is a pigmentation abnormalities which widely known can cause cosmetic disturbances. The treatment become a big challenge because of the etiopathogenesis's multifactorial. Modified Kligman formula (tretinoin 0,05%, fluocinolone acetonide 0,01%, hidroquinone 4%) were used as the melasma's treatment in dr. Soetomo hospital Surabaya. The retrospective distribution research based on melasma area and severity index (MASI) after melasma treatment in Dermatovenereology outpatient clinic of dr. Soetomo hospital on 2012-2014, show only 44,4% that has a decreased score. The tranexamic acid (AT) has been introduced as the adjuvant treatment that can lower the MASI score and give an improvement in the pigmentation. Topical usage were considered safer without serious adverse effects.

Purpose: To know the difference of the MASI score lowerance and evaluate the side effect between topical AT and modified Kligman formula with topical placebo and modified Kligman formula after 12th weeks usage on the melasma patient.

Methods: Analytic experimental with randomized, single blind, parallel design study, which compare topical AT and modified Kligman formula (treatment group) with topical placebo and modified Kligman formula (control group) on the melasma patient.

Results: This study involved 28 melasma patients (14 control and 14 treatment patients). The result shows significant difference after usage in the 4th week ($p=0,032$) in the MASI score lowerance between treatment and control group. There is no significant difference after usage in the 8th week ($p=0,052$) and the 12th week ($p=0,057$). Modified Kligman formula and AT have a different mechanism with a different receptor point. Combination of both agent hopefully can induce synergic effect that increase each efficacy. Side effect that can be caused is local erythematous, desquamation, burning sensation, pruritus, irritation (escoriation), and dry skin. This overlapping side effects gives us difficulties in determining each agent's side effects.

Conclusions: The usage of topical AT and modified Kligman formula after 4th weeks give significant lowering of the MASI score. Further research that can compare and determine the efficacy and side effect of each agent is needed.

Keywords: *melasma, modified Kligman formula, topical tranexamic acid, MASI score*