EFFECTIVENESS ADDITION OF INTRANASAL PHOTOTHERAPY TO DECREASE MUCOCILIARY TRANSPORT TRAVEL TIME AND LEVELS OF INTERLEUKIN 4 NASAL SECRETION IN ALLERGIC RHINITIS PATIENT WHO RECEIVED LORATADIN THERAPY

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ABSTRACT

Objective : Allergic rhinitis (AR) is an inflamatory disease of nasal mucosa which mediated by Imunoglobulin E (IgE) as a response to an allergic exposure. The process of migration and infiltration of inflammatory cells is strongly influenced by the role of regulated upon activation normal T cell Expressed and many cytokines such as interleukin 4 (IL-4). Measurement of the severity of the symptoms of AR can be done subjectively by assessing mucociliary transport travel time and objectively through increased levels of IL-4 nasal secretions. Until now the effectiveness of addition intranasal phototherapy to the decrease mucociliary transport travel time and IL-4 levels nasal secretions of people with AR who received loratadin therapy who got treatment at the outpatient unit in Otolaryngology-Head and Neck Surgery (ORL-HNS), Division of Allergy Immunology Dr. Soetomo Hospital still unknown.

Methods : Research conducted at Allergy–Immunology Division of ORL-HNS outpatient Department of Dr. Soetomo Hospital, Surabaya in July-October 2016. Sampling was done by consecutive sampling and obtained 15 samples for each intervention. All sample underwent mucociliary transport travel time and measured levels of IL-4 nasal secretions by using IL-4 method. Level of IL-4 in nasal secretion were measured by ELISA method with human IL-4 ELISA Kit reagen of Elabscience with catalog number E-EL-H0023. Total symptoms score were obtained by accumulating all the symptoms either nasal symptoms or non nasal symptoms. Data of IL-4 and mucociliary transport travel time performed statistical analytic with paired sample t-test.

Result : The mean reduction in mucociliary transport travel time of group phototherapy was 5.67 (SB 2.44) and group loratadin was 2.29 (SB 1.67). The results sample t-test showed that there was significant correlation between the levels of IL-4 nasal secretion in AR patients ($p < 0.05$). Mean reduction in IL-4 levels nasal secretions in group phototherapy was 83.32 (SB 7.93) pg/ml whereas post-therapy 80.34 (SB 9.58) pg/ml. Statistical test with independent sample t-test with p value = 0,363. Value shows the comparison decreased levels of IL-4 nasal secretions between the two groups was not significantly different ($p > 0.05$).

Conclusion : The addition of intranasal phototherapy in the treatment with loratadine are more effective than loratadine therapy in reducing mucociliary transport travel time in patients with AR but addition of intranasal phototherapy