Modulation of Immune Response in Long-Term Use of Inhaled Corticosteroid in Childhood Asthma Receiving Specific Immunotherapy

Abstrak:

Background: Inhaled corticosteroid is widely used in the management of mild to moderate persistent asthma including those receiving specific immunotherapy. Immunological mechanism underlie the improvement until now has not fully elucidated. Objective: To elucidate the modulation of immune response in long-term use of corticosteroid inhalation in asthmatic children receiving specific immunotherapy. Materials and Methods: Parents signed informed consent after receiving information of the study prior to enrollment. Randomization was done using “systematic random sampling”. Patients were divided into three groups: group A receiving inhaled budesonide, group B receiving specific immunotherapy, and Group C receiving both specific immunotherapy and inhaled budesonide. Patients aged 6-16 years received either inhaled budesonide or specific immunotherapy for 3 months. The daily budesonide dose was 400 mg for children aged 6-11 years or 200 mg for children younger than 11 years. The primary outcome was IL-4, IL-5, IFN-γ and IL-2 and FEV-1 reversibility. Ethical Committee of Dr. Soetomo Hospital Surabaya approved ethical clearance. Results: Significant differences were observed between pre and post treatment in all group (p<0.05). Patients receiving inhaled corticosteroid and immunotherapy showed attenuation of IL-4 and IL-5, elevation of IFN-γ and IL-2, and improvement of FEV-1 reversibility. Analysis of discriminant yielded IL-2 as primary discriminator and correlated with the decrease of IL-5. Conclusion: Addition of inhaled corticosteroid to immunotherapy results in marked attenuation of IL-5 correlates with greater elevation of IL-2 and play an important role in the modulation of immune response resulting in the improvement of FEV-1 reversibility.

Keyword:

childhood asthma, inhaled corticosteroid, immunotherapy, cytokine

Daftar Pustaka:

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