

Serum immunoglobulin-E level correlates with the severity of atopic dermatitis

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ABSTRACT: The immunoglobulin E (IgE) plays an important role in atopic dermatitis (AD) pathogenesis, in principle, it could serve as a marker for AD. Though, in some studies, showed no evidence of their correlation. The severity of AD is commonly evaluated using the scoring atopic dermatitis (SCORAD). This study aim was to assess the correlation between serum IgE levels and severity of AD. Serum from 20 AD outpatients was collected and their IgE levels were evaluated using enzyme-linked immunosorbent assay (ELISA) technique. The SCORAD assessments were also performed. There were significant differences serum IgE levels between AD and control group ($p < 0.05$). Furthermore, the correlation analysis result between serum IgE level and SCORAD was significant ($r = 0.73$; $p < 0.05$). The result showed that the increased of IgE level indicated the increasing of SCORAD. We suggest serum IgE level proved to be a useful tool in assessing the severity of AD.

Keywords: atopic dermatitis, immunoglobulin E, SCORAD

1 INTRODUCTION

Atopic dermatitis (AD) is a chronic, relapsing, inflammatory skin disease characterized by eczematous skin lesions, with itchy sensations (Leung et al. 2008). This disease affects 20–30% of children and 5–10% of adults in industrialized countries.

Scores to assess the severity of many skin diseases are important, particularly for evaluation of treatments and classification purposes (Stalder & Taieb 1993). Scores of AD have been developed to determine disease severity through an evaluation of lesion characteristics such as erythema, induration, and scaling in relation to the affected body surface area (Bieber 2008, 2010). The most widely used assessment for AD severity is the scoring atopic dermatitis (SCORAD) (Stalder & Taieb 1993).

The immunoglobulin-E (IgE), IgE-mediated mast cell, and eosinophil activation contribute to AD pathogenesis, but direct evidence supporting this mechanism is still unclear (Liu et al. 2011). Typically, AD patients tend to have greatly elevated levels of IgE (Bieber 2008) and IgE could be a marker for AD. However, some studies showed no evidence of a correlation between IgE elevated

levels and the degree of severity in AD (Gerdes 2009).

Thus, in this study, we tried to analyse the correlation between serum IgE levels and severity of AD.

2 MATERIALS AND METHODS

2.1 Patients

Twenty AD patients were enrolled using a consecutive sampling from Dermatology Clinic, Dr. Hasan Sadikin Hospital and fulfilled the Hanifin and Rajka criteria. The 20 healthy subjects were chosen as a control group. The subjects were excluded from the study when they used systemic and/or topical corticosteroids, antibiotics, and other immunosuppressive agents, such as cyclosporine, tacrolimus, azathioprine, etc. within the last two weeks before the study was started. They were also excluded if atopic manifestations exist, such as asthma, allergic rhinitis, or hay fever.

The study was approved by the Health Research Ethics Committee, Faculty of Medicine, Universitas Padjadjaran - Dr. Hasan Sadikin Hospital, Bandung, Indonesia. Oral explanation about the study was done and subsequently written informed consent was obtained from each participant.