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Mannose-binding Lectin Deficiency in Patients with a History of Recurrent Infections

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ABSTRACT

Mannose-binding lectin (MBL) is a protein of innate immune system that is involved in opsonization and complement activation. MBL deficiency is associated with predisposition to infectious diseases; however subnormal levels are also seen in healthy subjects. The aim of this study was to investigate the prevalence and clinical manifestation of MBL deficiency in patients with increased susceptibility to infection.

We studied the MBL serum concentration of 104 patients with a history of recurrent and/or severe infections referred to Immunology, Asthma and Allergy Research Institute (IAARI) in order to evaluate the primary immunodeficiency (PID). The distribution of MBL deficiency in these patients and 593 healthy subjects of previous study were analyzed.

The frequency of individuals with MBL deficiency was significantly higher in patients with recurrent and/or severe infections (13.5% [14/104]) compared with healthy subjects (4.7% [28/593]; p=0.001; OR 3.1, 95% CI 1.5-6.1). However, in 10.9% (7/64) of patients with recurrent infections without any immunodeficiency background, the MBL deficiency was detected.

On the whole, our findings indicate an association between MBL deficiency and increased susceptibility to infections.

Keywords: Deficiency; Mannose-binding lectin; Recurrent infections

INTRODUCTION

Mannose-binding lectin (MBL) is a collagen-containing C-type lectin (collectin) that plays an important role in innate immunity. A broad range of molecular patterns (e.g. mannose, N-