



ACADEMIC EXAMS
AT THE FACULTY OF MEDICINE OF THE UNIVERSITY OF LISBON
INSTITUTE OF ADVANCED TRAINING

Masters:

Medical Immunology (1st Edition)

Name of Student:

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Subject of Thesis:

Diagnosis of Self-Immune Chronic Rash. Study of Basophil Activation through Flow Cytometry.

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Jury:

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ABSTRACT

Introduction: In a group of patients with idiopathic chronic urticaria (ICU), the occurrence of autoantibodies directed to the high affinity IgE receptor (Fc ϵ RI₁) has been proposed to be the pathogenic mechanism. These antibodies are usually detected by autologous serum skin test (ASST). We aimed to determinate the clinical-laboratorial factors which help us to identify the patients with autoimmune chronic urticaria (AICU), to detect the Fc ϵ RI₁ antibodies by a modified serum-induced basophils activating test (BAT) and to evaluate the correlation between BAT and ASST.

Material and Methods: We included 48 random patients with ICU, submitted to exhaustive clinical and laboratorial investigation. We incubated the sera of ICU patients, 10 healthy controls (HC), 10 atopic controls (AC) or 10 patients with autoimmune disease (AID), with blood from one atopic donor (AD) and we measured the percentage of CD63-expressing basophils by flow cytometry.

Results: 28 (58%) patients had positive ASST (ASST+) and 31 (65%) positive BAT (BAT+). We demonstrated a significant correlation between ICU duration and their severity and basopenia presence. The patients with positive results for both ASST and BAT showed more severe and longer urticaria. We found a significant correlation between positive ASST and basopenia and positive antinuclear antibodies. Hashimoto's thyroiditis (HT) and hypothyroidism were observed only in ASST+/BAT+ patients. We observed a strong correlation between results of ASST and BAT. The sera of HC, AC and patients with AID did not induce CD63-expressing in the AD basophils.

Conclusions: In our population, the presence of more serious urticaria and basopenia was associated with a longer ICU duration. The patients with AICU showed more severe and longer urticaria. The presence of basopenia and antinuclear antibodies seems to be associated with a positive ASST. HT and hypothyroidism seems to be associated with AICU. We demonstrated a high agreement between 2 methods, ASST and BAT, for AICU diagnosis. The BAT allowed to identify the presence of basophils activating autoantibodies in a slightly higher percentage of patients than the ASST. Similarly, we obtained higher frequency of BAT positive results than the ones previously described in the literature, perhaps as result of our modifications of the procedure which increased the sensitivity of the test.

Key-words: Autoantibodies directed to the α subunit of the high affinity IgE receptor, autoimmune chronic urticaria, basophils activating test, CD63 expression, flow cytometry.