

HLA-A and -B Antigens and Larynx Carcinoma in Greeks

Stamatis Theocharis,¹ Kostas Konstantopoulos,¹ Kostas Bannis² and Jason Zervas^{†1}

¹First Department of Internal Medicine, University of Athens, School of Medicine, Laikon General Hospital, Athens-11527, Greece. ²Department of Head and Neck Surgery, Metaxa Anticancer Institute and Hospital, Piraeus-18537, Greece

ABSTRACT

The frequency of HLA antigens in 30 Greek larynx carcinoma patients was more prominent for the A21, A28 and B17 antigens compared to 400 healthy unrelated controls from the same population. It is suggested that immunogenetic factors may contribute to the pathogenesis of this neoplasia.

INTRODUCTION

The literature concerning the possible association between HLA antigens and larynx carcinoma remains rather limited. Terasaki et al. reported an association with HLA-BW21 in American Caucasian patients (5). Nevertheless, the HLA immunophenotypes of 64 American Caucasians with larynx carcinoma and 110 French ones, were studied by Tarpley et al. (4) and Deneufbourg et al. (1) respectively; no associations were found in these studies between HLA immunophenotypes and larynx carcinoma; however, the HLA-BW21 antigens was not typed in these studies. As the association of a certain disease with a particular HLA type may vary within several different ethnic groups, studies in more than one well-defined ethnic groups can be worthwhile (2). In this context, we studied the role of HLA antigens on larynx carcinoma in Greek patients.

MATERIALS AND METHODS

The HLA antigens in 30 Greek biopsy-proven larynx carcinoma patients were typed. Twenty five males (83.3%), aged 45-74 years old (mean 60.3) and 5 females (16.7%), aged 40-72 years old (mean 59.0) were studied. Fifty-nine antisera were used for the typing, testing for 26 HLA antigens of the A and B series (11 and 15 respectively). The standard NIH microlymphocytotoxicity test was applied; the results were compared to those of 400 healthy unrelated controls from the same population. Statistical evaluation of the results was made by X^2 analysis after Yates correction and multiplication of the p-values for the number of antigens tested (p_{corr}); the relative risks (RR) were also calculated for each antigen (5).

Table 1. Frequency of HLA-A antigens in patients with larynx carcinoma and in normal controls.

Antigens	Controls (400)		Patients (30)	
	no.	%	no.	%
HLA-A1	103	(25.8)	4	(13.3)
-A2	207	(51.8)	20	(66.7)
-A28	40	(10.0)	11	(36.7) ^a
-A3	99	(24.8)	6	(20.0)
-A9	130	(32.5)	13	(43.3)
-A10	55	(13.8)	4	(13.3)
-A11	34	(8.5)	1	(3.3)

a) RR = 5.2, $X^2 = 16.52$, $p_{\text{corr}} < 0.001$

RESULTS AND DISCUSSION

The frequency of the HLA-A and -B antigens in patients and controls is presented in Tables 1 and 2, respectively. As it is shown in Table 1, HLA A28 shows significant deviation in patients compared to controls (36.7% in patients and 10.0% in controls); $p_{\text{corr}} < 0.001$ and RR=5.2. The antigens B17 (46.7% in patients and 9.8% in controls, $p_{\text{corr}} < 0.001$ and RR=8.09) and B21 (30.0% in patients and 2.5% in controls, $p_{\text{corr}} < 0.001$, RR=14.1) showed significant difference in larynx carcinoma patients compared to the control group (Table 2).

Our results thus, are in accordance to the published observations for an increased frequency of HLA-B21 in Greek patients with larynx carcinoma (1). Additionally, the significant association for A28 and B17, observed in this study, are first time reported. The percentages of patients with antigens A28, B17 and B21 are impressively large and provide a rather strong evidence that a relation may exist between this disease and HLA system, although the group of patients examined was admittedly smaller than those of other investigators (3, 4).

As immunogenetic factors are involved in the pathogenesis of several neoplasms including solid tumours, it is evident that more extended studies in this field employing patients of several stages of the disease and correlating the impact of several HLA-types with prognosis and survival are required; HLA-class II (DR) types are also needed.

Table 2. Frequency of HLA-B antigens in patients with larynx carcinoma and in normal controls (400 unless otherwise stated).

Antigens	Controls (400)		Patients (30)	
	no.	%	no.	%
HLA-B1	122	(30.5)	5	(16.7)
-B7	57	(14.3)	5	(16.7)
-B8	55	(13.8)	7	(23.3)
-B12	74	(18.5)	5	(16.7)
-B13	40	(10.0)	1	(3.3)
-B14	37	(9.3)	1	(3.3)
-B15	30	(7.5)	1	(3.3)
-B17	39	(9.8)	14	(46.7) ^b
-B21	2/68	(2.5)	9	(30.0) ^c
-B27	27	(6.8)	3	(10.0)
-B35	69	(17.3)	1	(3.3)
-B40	21/215	(9.8)	5	(16.7)

b) RR = 8.09, $X^2 = 31.86$, $P_{\text{corr}} < 0.001$

c) RR = 14.14, $X^2 = 13.73$, $P_{\text{corr}} < 0.001$

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Address for reprints:

Kostas Konstantopoulos, MD

1st Dept. of Int. Medicine

Athens University Medical School

Laikon Hospital

GR-11527-Athens

Greece

Phone/fax: (01) 649 51 06