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NEWSLETTER

The HLA System and Primary Open-Angle Glaucoma

Reay H. Brown, Paul R. Lichter and Richard F. Haines
Departments of Ophthalmology and Surgery, University of Michigan Hospital, Ann Arbor, Michigan, U.S.A.

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Primary open-angle glaucoma (POAG) has been associated recently with several HLA antigens. One study of 49 POAG patients found an increase in the Bw35 antigen (46.9% vs. 22.8% of controls) (Aviner et al. 1976). An investigation of 40 white and 40 black POAG patients failed to confirm this but found an increase in antigens B7 (49% vs. 20% of controls) and B12 (50% vs. 11% of controls) (Shin et al. 1977). This latter report indicated that either antigen B7 or B12 was present in 88% as compared to 30% of controls.

We tissue-typed 24 non-diabetic, Caucasian POAG patients using the lymphocyte microcytotoxicity technique (Ray et al. 1976). Each specimen was examined for 22 antigens by testing it against 158 antisera. The control group consisted of unrelated normal Caucasians. *P*-values were calculated by Woolf's method of relative risk and were multiplied by 22 – the total number of antigens being compared (Woolf 1955, Grumet et al. 1971).

The antigen prevalences in the POAG patients did not differ significantly from the control prevalences (Table 1).

It is not clear why three relatively similar studies all reached different conclusions. However, several of our control prevalences differed substantially from those reported by Shin et al. Their control population was racially mixed and relatively smaller (46 total, 40 whites and six blacks). The discrepancies were most marked for the associated antigens – especially B12. Shin et al. reported a general prevalence for B12 of 11%. This is significantly different from a combined average of our value of 26% and the 24% reported by Aviner et al. ($P < 0.05$). Furthermore, Shin et al. did not multiply their *P*-values by the number of antigens under examination. This statistical correction by itself would make the elevation in B7 insignificant at the 5% level. If the correction were applied to a *P*-value for antigen B12 calculated using our control prevalence, then the reported increase in prevalence would no longer be significant.

This study does not support an association between the HLA system and POAG. In view of the conflicting results of other investigations, a strong correlation between

POAG and an A or B locus antigen is doubtful.

Table 1
Distribution of HLA Antigens in Open-Angle Glaucoma Patients (n = 24) and Controls

HLA Antigen	Number of Controls	Percent of POAG Patients with Antigen	Percent of Controls with Antigen(s)
A1	612	33	28
A2	612	42	50
A3	612	25	24
A11	608	13	13
Aw24	467	21	15
Aw25	446	4.2	4 5
Aw26	489	8.3	4.9
A29	557	13	7.4
Aw30	401	4.2	4.2
Aw31	401	17	6.5
Aw32	401	4.2	4.5
B5	612	8.3	12
B7	612	25	26
B8	612	29	19
B12	612	29	26
B13	594	4 2	3.9
B14	599	4 2	7.8
Bw15	599	8 3	12
B18	599	8 3	9.0
B27	594	8.3	8.2
Bw35	612	25	17
Bw40	611	21	15
B7 and/or B12	612	54	48

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Address:
Paul R. Lichter, M.D.
Department of Ophthalmology
C-6058 – Outpatient Building
University of Michigan Hospital
Ann Arbor, MI 48109
U.S.A.