COMPARISON OF INTESTINAL TISSUE DAMAGE AND HLA HAPLOTYPES BETWEEN AMERICAN AND ITALIAN CELIAC DISEASE PATIENTS

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Background: Celiac disease (CD) has been underestimated in US. Among the possible explanations, atypical clinical presentations and a less severe intestinal damage were hypothesized.

Aim: To compare the degree of histological damage and HLA distribution among American and Italian CD patients.

Patients and methods: We investigated 35 American and 67 Italian CD patients diagnosed on the basis of the ESPGHAN criteria. Intestinal biopsy was obtained from upper endoscopy and the intestinal damage was graded as total villous atrophy (TVA) or partial villous atrophy (PVA). Eu-DQ (Eurospital Trieste, Italy) was used for the determination of HLA-DQ2 and -DQ8 haplotypes, which were coded for the alleles DQA1*0501/DQB1*0201 and DQB1*0302. After the preliminary DNA extraction of each sample and subsequent multiplex PCR, a submarine electrophoresis was performed and the products of the PCR were visualized on an UV transilluminator.

Results: The distribution of DQ2 and DQ8 (alone or in combination with DQ2) in American (86% and 14%, respectively) and Italian (73% and 27%, respectively) CD patients was similar. Overall, TVA was significantly less (p=0.007) in American CD patients compared to Italian CD patients (Table). When analyzed by HLA haplotype, no difference in TVA was detected among American and Italian patients harboring DQ8 (alone or in combination with DQ2) (see Table). In both populations there was a trend of more severe intestinal damage in patients harboring the DQ8 haplotype, even if this difference was not statistically significant. Conversely, only 26% of DQ2 American CD patients showed TVA as compared 59% of Italian group (p=0.018). Conclusions: American CD patients showed a less severe intestinal damage as compared to the Italian patients. This difference was related to the presence of DQ2 but not DQ8 haplotype (either alone or in association with DQ2). These results suggest that environmental factors and/or not-HLA related genes dictate the severity of intestinal tissue damage in patients harboring only the DQ2 haplotype.

Correlation between HLA haplotypes and intestinal tissue damage

HLA haplotype	**USA**		**ITALY**	
	TVA (%)	PVA (%)	TVA (%)	PVA (%)
DQ2	27	73	59	41
DQ8 - DQ2/DQ8	60	40	72	28
TOTAL	31	69	63	37

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