Poster Presentations

PP-09

Correlation of Anti-HLA-DR51/52/53 Antibodies Positivity with Flow Cytometry Results

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Objectives: Interactions between recipient and donor immune cells occur in the allograft microvasculature. All three human leukocyte antigen (HLA) class II antigens, DR, DP and DQ, have been detected on renal epithelial cell with a markedly increased expression of HLA class II observed in renal allografts undergoing rejection (1). HLA-DR affects the rejection process, especially by playing a critical role in activating CD4+ T-cells. Some DRB1 locus alleles are inherited together with different DRB4 (DR53), DRB3 (DR52), DRB5 (DR51) loci (2). Other HLA-DRB molecules, which are encoded by loci different from HLA-DRB1 are weakly polymorphic (3). In our study, we aimed to investigate the effect of anti-HLA DR51/52/53 detected in PRA tests of kidney transplant candidates on Flow cytometry cross-matching (FCXM) positivity alone or in combination.

Materials and Methods: In our study, the results of 200 patients who underwent simultaneous PRA and FCXM tests in İstanbul University İstanbul Faculty of Medicine, Tissue Typing Laboratory between 2019-2023 were retrospectively analysed. PRA tests were performed with Luminex (Immucor) and cross match tests were performed with FCXM method.

Results: At least one of the antigens belonging to anti-HLA-DR51/52/53 subgroups was positive in 55.5% (n=111) of 200 class II PRA (+) patients included in the study. In the DR51 subgroup, DR15 (p=0.007) and DR16 (p=0.011) were associated with FCXM-B positivity both alone and in combination (p=0.006), while DR16 (p=0.017) was associated with FCXM-T positivity both alone and in combination with DR15 (p=0.019). The combination of DR13, DR14, DR17, DR18 in the DR52 subgroup was associated with FCXM-T positivity(p=0.027). The association of DR4 and DR9 in the DR53 subgroup was associated with FCXM-B positivity(p=0.003).

Conclusion: The results of our study suggest that typing of HLA-DR superfamily subgroups, which are critical for rejection risk, may be important in predicting FCXM positivity. Furthermore, although HLA-DR51, -DR52 and -DR53 antigens are significantly weaker expressed than the general DR antigens originating from the DRB1 gene, HLA-DR51, -DR52 and -DR53 antigens are known to always depend on DR antigens (4,5). Therefore, it is recommended that these antibodies should be taken into account during HLA-DR51/52/53 typing and donor-specific antibodies evaluation for all donors and recipients.

References

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PP-10

Distribution of HLA-DQA1 and HLA-DQB1 Alleles in Celiac Patients

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Objectives: Celiac disease is a chronic autoimmune enteropathy triggered by the ingestion of gluten, leading to small intestine damage and autoantibody formation. The disease is linked to human leukocyte antigens (HLA)-*DQ* genes that encode the HLA-DQ2 and DQ8 proteins.

Materials and Methods: In this study, 108 adult patients diagnosed with celiac disease and 100 healthy controls included. HLA-DQA1 and -DQB1 alleles were typing with SSO-PCR technique. Relative risks for different alleles were also evaluated.

Results: The allele frequencies between patients and healthy controls, DQA1*03:01 (p=0.011), DQB1*03:02 (p=0.017) are the alleles showing statistically increased in patients. In typical celiac patients DQA1*05:01 and DQB1*02:01 alleles were significantly higher and DQA1*05:05 allele was lower (respectively, p=0.003, p=0.006, p=0.027). There was no statistically significant difference in DQ2 heterozygous genotype frequency between patients and controls. The DQ2 homozygous genotype has a higher frequency in celiac patients, but this increase is not statistically significant. The DQ8 heterozygous genotype was found at a significantly higher frequency in celiac patients than in healthy controls (p=0.018). Gastrointestinal system related findings the DQB1*0501 allele showed a positive association with weight loss (p=0.049). The DQB1*0303 allele was strongly associated with reproductive system symptoms (p=0.041).

Discussion: HLADQ2, HLADQ2.5 and DQ8 genotypes play important roles in determining the genetic susceptibility to celiac disease. The DQ2 heterozygous genotype does not play a significant role in predisposing and DQ8 homozygous carriers may be predisposed to celiac disease. These genetic findings may help to diagnose celiac disease earlier and more accurately and to develop personalized treatment approaches.

Keywords: Celiac disease, human leucocyte antigen, polymerase chain reaction sequence-specific oligonucleotide, HLA-DQA1/DQB1