HLA-C stability and AIDS progression

Stefani Chiara[1]., Sangalli A[1]., Locatelli E[1]., Argañaraz ER[2]., Argañaraz GA[2]., Bosco da Silva CM[3]., da Silva Duarte AJ[3]., Casseb J[4]., Romanelli MG[1]., Zipeto D[1].

1 Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona, Verona, Italy

2 Lab of Molecular NeuroVirology, Faculty of Helath Science, University of Brasília.DF, Brazil

3 Medical Investigation Laboratory Unit 56 (LIM/56), Faculdade de Medicina FMUSP, Universidade de São Paulo, São Paulo, SP, Brazil

4 Faculty of Medicine, Institute of Tropical Medicine, University of São Paulo, Brazil

MHC class I complex is an essential component in the antigen presentation process and it is composed of HLA-A/B/C, β2 microglobulin, and a peptide. Previous studies reported that less expressed HLA-C variants are associated with poor HIV-1 control and rapid progression to AIDS. In addition, we found that HLA-C variants predominantly present as free-chains increase HIV-1 infectivity. To test whether these HLA-C variants are similarly associated with rapid progression to AIDS, we are genotyping HLA-C in a cohort of 121 AIDS patients form USA, Canada and Brazil. We classified HLA-C alleles as stable or unstable depending on their binding stability to β2 microglobulin. DNA samples from HIV-1 patients were classified according to the rate of disease progression as elite controllers (ECs), long term non-progressors (LTNPs) and progressors (Ps). ECs and LTNPs have a better control on HIV-1 infection and remain asymptomatic even for several years, whereas Ps have a rapid clinical progression to AIDS. This set of 121 samples includes 11 ECs, 43 LTNPs and 67 Ps. Our preliminary results highlight a trend of association between unstable HLA-C alleles and AIDS progression. These data need to be further strengthened by more samples in order to achieve statistical significance.