

OTR.10 - Evaluation of neutralizing anti-HIV-1 response in individuals infected by viral subtypes prevalent in Brazil in relation to *env* gene

Dalziza de Almeida^{1*}; Karine Venegas Macieira¹; Monick Lindenmeyer Guimarães¹.

¹Fiocruz/IOC.

Introduction:

It is expected that an HIV/aids vaccine be able to induce specific response in CD8+ T cells and neutralizing antibodies (nAb). However the high genetic variability of the HIV envelope gene (*env*) is one of the factors that can influence the ability of a vaccine. Thus, in order to assess humoral immune response against immunogens, HIV-1 neutralizing antibody detection assays was used with five pseudovirus (B, Bbr, C and F1 subtypes) and TZM-bl cells.

Objective:

This study aims to evaluate the humoral immune response in individuals infected with prevalent HIV-1 subtypes and map the *env* gene characteristics of HIV-1.

Methodology:

60 plasma samples from individuals infected with HIV-1 subtypes B, Bbr, C or F1 in Brazil were selected for evaluation of humoral immune response.

Results:

A greater breadth and potency of anti-Env neutralizing response in individuals infected with the F1 or B HIV-1 subtypes was observed when compared with the C subtype and variant B/Bbr ($p < 0,005$). The regions V1 from B/Bbr subtype had greater number of amino acids than the other subtypes and V4 region from F1 subtype had fewer amino acids ($p < 0.005$). Some subtype-specific signatures of F1 subtype and B/Bbr samples located in regions C2, V3 and gp41 may have influenced in the neutralizing response difference between them.

Conclusion:

These results indicate that a single amino acid substitution in the V3 loop may lead to a distinct conformational exposure or electrostatic load and interfere with the neutralizing response potency and has a significant implication for the vaccine design.

Keywords: pseudovirus; neutralizing antibodies; HIV