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The impact of alcohol use on markers of inflammation, and cognitive functioning on antiretroviral treated individuals

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Despite advances in antiretroviral therapy (ARVT), HIV associated neurological disorders affect up to 60% people living with HIV (PLWH). These disturbing prevalences have been attributed to a persistent inflammatory response; however, the underlying mechanisms need to be further elucidated for effective intervention. TNF- α is a highly pleiotropic cytokine that may contribute to HIV associated neurotoxicity given its role on viral replication and neuronal apoptosis. Given the high prevalence of hazardous alcohol use (HAU) among PLWH, HAU role in sustaining a pro-inflammatory response was investigated. Using a case control study 200 PLWH receiving medical care were enrolled and stratified according to alcohol intake. Baseline analyses were used to this purpose. According to the data, hazardous drinkers, particularly those consuming liquor and beer, exhibited higher TNF- α levels. Elevation of TNF- α was independent of the presence of liver disease indicating that mechanisms other than liver damage were mediating the disturbances. The implications of these findings are far-reaching given that TNF α levels were significantly associated with lower CD4 cell counts, and cognitive impairment. Cognitive analysis demonstrated that higher TNF- α levels were associated with longer completion times for the Trail Making Test 1 and 2 ($p = 0.02$), and difficulties naming words starting with letters t and s. Participants in the highest TNF tertiles also learned fewer words, remember less words after a short delayed and have less visual search activity. In summary, despite ARVT HAU of liquor or beer has significant effects on serum TNF- α levels and this proinflammatory response is associated with cognitive impairments.

Biography

Dr. Miguez is a Medical Doctor with extensive neuroimmunology training. Dr. Miguez is Professor at the School of Integrated Health and Science at the Florida International University. She is also the PI of several HIV grants focused on alcohol and tobacco. She has published more than 80 papers in reputed journals and serves as an editorial board member of the Journal of AIDS and Clinical Research