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Impact of short term anti-retroviral therapy on some fibrinolytic markers in HIV infected Nigerian adults

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Abstract

Derangement in fibrinolytic markers can result in thrombosis and cardiovascular problems and anti-retroviral therapy (ART) has been reported to affect the levels of these markers. How long the patients will be exposed to these ART before the effect of the drugs on the fibrinolytic markers become noticeable is not well known. This study was aimed at bridging this knowledge gap. 20 HIV subjects on ART and 20 controls (non- ART) were progressively monitored for three months. CD4 T cell count was determined using the Partec Flow cytometry counter while D-dimer, t-PA and PAI-1 parameters were determined using ELISA kits from TECHNOCLONE, Austria. CD4 cell count increased from 192µ/ml at baseline to 323 µl/ml at month 3 among patients on antiretroviral therapy. D-Dimer values decreased from 301.0µl/ml at baseline to 172.0 µl/ml at month 2 and increased significantly to 226.0 µl/ml at the end of the third month. The median baseline value of PA1-1 at the beginning of therapy was 14.0µg/ml, which increased progressively to 18.2µg/ml at the end of the third month. The baseline value of t-PA at the beginning of therapy was 5.15µg/ml. This value progressively declined to 1.10µg/ml at the end of the first month and increased minimally to 1.45µg/ml and 1.5µg/ml at the end of the 2nd and 3rd month respectively. D-dimer was positively and significantly correlated with CD4 cell counts in both ARV and non-ARV patients. ($r = -0.304$, $p<0.01$ vs. $r= -0.477$; $p<0.001$). t-PA was negatively and significantly correlated with CD4 T lymphocytes in only those undergoing the antiretroviral therapy($r= -0.294$, $p<0.01$). A progressive increase in PAI-1 value and steady decline in t-PA values within three months of commencement of antiretroviral therapy is capable of predisposing the patients to thrombotic disorders earlier than is expected. Pre-thrombotic assessment during therapy is hereby advocated.

Keywords: Fibrinolytic markers, D-dimer, t-PA, PAI-1