



#IVTEAM #Intravenous literature: Sule, A.A., Pandit, N., Handa, P., Chadachan, V., Tan, E., Sum, F.N., Joyce, E.H. and Chin, T.J. (2013) Risk of Venous Thromboembolism in Patients Infected with HIV: A Cohort Study. *The International Journal of Angiology*. 22(2), p.95-100.

Abstract:

**Introduction:** Human immunodeficiency virus (HIV) patients are at risk of developing thrombosis than general population. There are several intersecting mechanisms associated with HIV infection and antiviral therapy that are emerging, which may lead to vasculopathy and hypercoagulability in these patients.

**Methods:** We analyzed the HIV patients who followed up with our Vascular Medicine outpatient clinic with venous thromboembolism (VTE) over the past 3 years and followed them prospectively. The patients included were those who had minimum, regular follow-up of 3 months, with a Doppler scan in the beginning and last follow-up. Patients were analyzed for age, gender, race, site of thrombosis, coagulation factors, lipid panel, type of antiretroviral treatment, past or present history of infections or malignancy, CD4 absolute and helper cell counts at the beginning of thrombosis, response to treatment and outcome. Patients with HIV with arterial thrombosis were excluded.

**Results:** A total of eight patients were analyzed. The mean age was 49.87 years (range, 38-58 years). All were male patients with six patients having lower limb thrombosis, one patient with upper limb thrombosis related to peripheral inserted central catheter (PICC), and one

patient had pulmonary embolism with no deep vein thrombosis. Most common venous thrombosis was popliteal vein thrombosis, followed by common femoral, superficial femoral and external iliac thrombosis. Two patients had deficiency of protein S, two had high homocysteine levels, one had deficiency of antithrombin 3, and one had increase in anticardiolipin Immunoglobulin antibody. All patients were taking nucleoside and nonnucleoside inhibitors but only two patients were taking protease inhibitors. There was history of lymphoma in one and nonsmall cell lung carcinoma in one patient. Three patients had past history of tuberculosis and one of these patients also had pneumocystis carinii pneumonia. The mean absolute CD4 counts were 383.25 cells/UL (range, 103-908 cells/UL) and helper CD4 counts were 22.5 cells/UL (range, 12-45 cells/UL). All were anticoagulated with warfarin or enoxaparin. There was complete resolution of deep vein thrombosis in two patients (one with PICC line thrombosis in 3 months and other with popliteal vein thrombosis in 1 year). There was extension of clot in one patient and no resolution in others. Seven patients are still alive and on regular follow-up.

Conclusion: Thrombosis in HIV patients is seen more commonly in middle aged, community ambulant male patients. Left lower limb involvement with involvement of popliteal vein is most common. Deficiency of protein S and hyperhomocystenaemia were noted in these patients. Most of these patients did not respond to therapeutic anticoagulation, but the extension of the thrombosis was prevented in majority of cases.

Other intravenous and vascular access resources that may be of interest (External links - IVTEAM has no responsibility for content).

Guide for intravenous chemotherapy and associated vascular access devices from Macmillan. An example of peripheral cannulation OSCE from OSCE Skills.

