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Effect of a high dose of vitamin D on a rabbit model of atherosclerosis

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Multifactorial factors have been involved in atherosclerosis. An association has been shown between osteoporosis and carotid atherosclerosis. This work evaluates the effect of vitamin D on regression of atherosclerosis. Forty-eight male rabbits were divided into: Group Ia: [Standard diet and saline for 4 weeks]; Group I b: [Standard diet and a high dose of vitamin D3 daily for 4 weeks]; Group IIa: [Cholesterol enriched diet for 4 weeks]; Group IIb: [Cholesterol enriched diet and a single high dose of vit D3, daily for 4 weeks. At the end of 4 weeks, the rabbits were sacrificed for assay in serum lipid profile, C reactive protein (CRP), vitamin D3 metabolite, calcium, soluble adhesion molecules (sVCAM and sICAM) and nitrite (NO) and malondialdehyde (MDA) released from isolated aortic rings. Results showed that vitamin D produced a significant reduction in the sera of lipid profile, CRP, and adhesion molecules, associated with a non-significant change in serum calcium and a significant increase in the body level of vitamin D3. Addition of vitamin D to the incubated aortic rings of the atherosclerotic rabbits resulted in a significant increase in NO and decrease in MDA release. It could be concluded that vitamin D has anti-atherosclerotic effects, and may exert these effects by inhibiting lipid peroxidation and stimulation of nitric oxide, resulting in attenuation of the inflammatory atherosclerotic process.

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Effect of antiretroviral therapy on the risk factors for cardiovascular and renal diseases amongst HIV-infected patients in a Nigerian university teaching hospital

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Background: Antiretroviral therapy (ART) has been reported to cause insulin resistance, low HDL and other abnormalities that may increase the risk for the development of cardiovascular and renal diseases.

Objectives: This study was aimed at evaluating the effects of different antiretroviral regimens on the risk factors for the development of cardiovascular and renal diseases in HIV-infected patients.

Method: The database of 625 HIV-infected patients, on ART for a minimum of five years, was analyzed retrospectively to determine the association between the drugs and cardiovascular or renal diseases outcomes.

Results: Antiretroviral therapy regimens based on lamivudine, stavudine, nevirapine or tenofovir were significantly associated with elevated blood pressure, insulin resistance and chronic kidney disease ($p < 0.05$). In addition, age ($p = 0.04$, OR=1.019) and sex ($p = 0.01$, OR=0.512) were significant risk factors for hypertension while age alone was a significant risk factor for diabetes ($p = 0.03$, OR=0.928)

Conclusion: Antiretroviral therapy regimens were significantly associated with the development of cardiovascular and renal diseases with lamivudine, stavudine, tenofovir and nevirapine-based regimens showing the highest risk.

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