INFECTION

MYOCARDIAL DISEASE IN PATIENTS WITH HIV

Approximately 34 million individuals worldwide are infected with HIV, which can now be treated with combination antiretroviral therapy (cART). Nevertheless, according to data from a new observational study, individuals infected with HIV have an increased burden of myocardial disease, in addition to the known association between HIV and coronary artery disease. Associate Professor Cameron Holloway, who was the lead author on the study report, believes that “there is an urgent need to understand the pathophysiology of cardiac complications to enable effective therapies and prevention of cardiac disease in patients with chronic HIV”.

Accordingly, Holloway and colleagues from the University of Oxford, UK, enrolled 90 patients with HIV and who were receiving cART, together with 39 age-matched control individuals with no history of cardiac disease. Analysis of blood samples showed that, compared with controls, patients with HIV had a 15% lower median HDL-cholesterol level and a 74% increase in the median triglyceride level. The total-cholesterol and LDL-cholesterol levels were not significantly different between the two groups.

All participants then underwent imaging studies to determine myocardial function, lipid content, and fibrosis. ¹H magnetic resonance spectroscopy revealed significantly elevated myocardial steatosis in patients with HIV. The median myocardial lipid level was elevated by 47% in those with HIV, independently of the increase in serum triglyceride level. Late gadolinium-enhancement MRI detected patchy myocardial fibrosis in 76% of patients with HIV, predominantly in the basal inferolateral wall, compared with in only 13% of control individuals.

The investigators suggest that the “cardiac steatosis in association with deranged plasma lipids, altered myocardial function, and a high rate of myocardial fibrosis in nearly all patients with treated HIV infection ... may in part explain the ... increased mortality reported in subjects receiving cART”. They “hypothesize that cardiac steatosis is a sequela of cART-induced hyperlipidaemia and dysglycaemia, though prospective studies ... are needed to test this theory.”

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Original article Holloway, C. *et al.* Comprehensive cardiac magnetic resonance imaging and spectroscopy reveals a high burden of myocardial disease in HIV patients. *Circulation* doi:10.1161/CIRCULATIONAHA.113.001719