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Peri-renal fat diameter is related to intima media thickness and renal arterial resistance index in HIV-1 infected patients

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Purpose of the study

There is concern that human immunodeficiency virus (HIV) infection and the use of highly active antiretroviral therapy lead to accelerated atherosclerosis and increased risk of cardiovascular disease [1]. Primary objective of our study was to evaluate whether peri-renal fat diameter (PRFD), a parameter of visceral obesity, is related to renal arterial resistance index (RI) and carotid intima-media thickness (IMT), indices of atherosclerosis in HIV-infected patients [2].

Methods

We enrolled 68 consecutive HIV1-infected patients in a cross-sectional study. All patients were receiving highly active antiretroviral therapy (HAART) for more than 6 months. Echographically measured thicknesses of peri-renal and subcutaneous fat and intima-media, as well as serum metabolic parameters were evaluated. PRFD and IMT were measured by ultrasonography using 3.75 mHz and 15 mHz probe. Doppler ultrasonography was used to calculate renal arterial RI using a 3.75 mHz probe.

Summary of results

PRFD showed a significant correlation with renal arterial resistance index ($r = 0.41$, $p = 0.0006$) and IMT ($r = 0.46$, $p = 0.0001$). We further found a positive correlation between PRFD and cardiovascular risk ($r = 0.38$, $p = 0.0017$) calculated using the Framingham Risk Score algorithm.

Conclusion

Our data demonstrated that ultrasonographic assessment of peri-renal fat diameter may have the potential to be a marker of increased cardiovascular risk in HIV1-infected patients.

References

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2. Mercié P, *et al.*: **Evaluation of cardiovascular risk factors in HIV-1 infected patients using carotid intima-media thickness measurement.** *Ann Med* 2002, **34(1):**55-63.