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BACKGROUND

A Quarter Century of HIV: Scientific and Social Challenges for the Next Generation

Update on Anti-Retroviral Resistance in HIV

Advances in our understanding of the mechanisms of resistance to antiretrovirals in those infected with HIV, as well as the extent to which resistance is being seen, have led to several recent important changes in clinical practice. Resistance testing at baseline now is recommended in both the newly-infected as well as the chronically-infected patient. Resistance testing typically can be performed at HIV RNA levels as low as 500-1000 copies/ml, and is recommended prior to any change in antiretroviral regimen.

Along with the advances, however, have come new challenges. Algorithms for interpreting resistance are complex, non-standardized, and still require expert interpretation. In addition, “mutation scores” for newly-introduced protease inhibitors, such as tipranavir and darunavir, require memorizing a bewildering array of amino acid changes at multiple positions in protease. Consequently, clinicians have started to demand more understandable and clinically-validated systems for interpreting changes in reverse transcriptase and protease that occur as a result of exposure to antiretroviral therapy.

The present talk will discuss these issues as well as the advantages and disadvantages of the various resistance tests currently available. It is hoped that the audience thereby will gain a greater appreciation for the role that these tests will play in the next 3-5 years.

Speaker: Dr. Rodger MacArthur, MD
Associate Professor and Director of HIV/AIDS Clinical Research Wayne State
University/Detroit Medical Center, Detroit, MI

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Cardiovascular Risk Associated with HIV

It is estimated that approximately 1,000,000 North Americans are currently living with HIV. The use of highly active antiretroviral therapy (HAART) has revolutionized treatment and led to a substantially prolonged life expectancy in HIV positive men and women. Although HAART regimens are able to suppress viral replication, there is evidence that some antiretroviral drugs are associated with a range of metabolic abnormalities that may lead to cardiovascular disease (CVD).

CVD may be caused by accelerated atherosclerosis resulting from side effects of antiretroviral therapy (ART) such as dyslipidemia, insulin resistance, and lipodystrophy. Compared with the general population of a similar age, HIV-positive patients have lower prevalence of hypertension, a lower mean high density lipoprotein cholesterol (HDL-C) concentration, a higher prevalence of smoking, a higher mean waist-to-hip ratio, and a higher mean triglyceride (TG) concentration. When compared with other patients with acute coronary syndromes, HIV patients with acute coronary syndromes are younger, and more likely to be male, and/or to be current smokers with low HDL cholesterol (HDL-C) levels. They are also more likely to have single-vessel disease; however, their re-stenosis rates after percutaneous coronary intervention are unexpectedly high.

Lipid lowering therapy and HIV

To counteract some metabolic complications, lipid-lowering medications are frequently used, despite limited knowledge about their efficacy, safety and potential interactions with ART. Small clinical trials suggest that pravastatin and fluvastatin reduce concentrations of total and low density lipoprotein cholesterol (LDL-C) without substantial adverse effects. Pharmacokinetic studies suggest that simvastatin should be avoided and atorvastatin used with caution in persons taking ritonavir and saquinavir because of drug-drug interactions. Fibrates on the other hand are generally regarded as safe and moderately effective. The TG-reducing effects of fish oil, a natural alternative to drugs, have been demonstrated in an HIV-positive population.

Carotid artery intima-media thickness (IMT)/plaque area as a surrogate marker of atherosclerosis

Carotid artery ultrasound is a safe and well-validated method to determine present and future vascular risk. This technique has shown that individuals with metabolic syndrome have increased thickness of the IMT compared with subjects without the metabolic syndrome. In HIV patients, IMT measurements appear to reflect the presence of traditional risk factors such as smoking and hypertension. Lastly, carotid ultrasound has been extensively used to determine the cardio protective effect of lipid lowering drugs such as statins and angiotensin converting enzyme (ACE) Inhibitors.

Summary of Talk

The Cardiovascular risk associated with HIV will summarize the clinical and biochemical features of the HIV Metabolic Syndrome (or Lipodystrophy Syndrome). This will include changes in body fat re-distribution, lipid abnormalities, Insulin resistance and bone disorders. The metabolic abnormalities associated with HIV and their relation with vascular disease will be highlighted. The vascular risk in HIV patients has been estimated to be increased nearly 25%. The talk will describe the clinical utility of biochemical tests such as apo B and imaging techniques such as carotid ultrasound in assessing vascular risk in patients with HIV. Finally, it will describe the effectiveness of medications such as statins and insulin sensitizers (glitazones) in patients with HIV-related metabolic disorders.

Speaker: Dr. Greg Bondy, MD FRCP(C)
Clinical Associate Professor, UBC
Associate Director, Heart Healthy Lipid Clinic, St. Paul's Hospital, Vancouver BC

About the AMMI Canada – CACMID Annual Conference

The Annual Conference 'Where Canada's experts in Clinical Microbiology and infectious diseases meet', is a conjoint meeting between the Association of Medical Microbiology and Infectious Disease (AMMI) Canada (**www.ammi.ca**) and the Canadian Association for Clinical Microbiology and Infectious Diseases (CACMID) (**www.cacmid.ca**). The meeting is also an approved Accredited Group Learning Activity as defined by the Maintenance of Certification program of the Royal College of Physicians and Surgeons of Canada.

For more information about the AMMI Canada - CACMID Annual Conference 2007, go to **www.ammi.ca/annual_conference**.

The plenary sessions are open to the media. To attend the conference or to request an interview, please contact:

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