Clinical Capsules

Lipid Measures in Dialysis Patients

Lipid management can be accomplished in hemodialysis patients without requiring them to fast overnight—a significant difficulty for those who have diabetes and those with an afternoon or evening dialysis schedule, reported Simon Desmeules, M.D., and his associates at the University of Quebec Hospital Center.

Aggressive lipid management is required in dialysis patients because their cardiovascular mortality is 20 times higher than that of the general population, the investigators noted (Am. J. Kidney Dis. 2005;45:1067-72).

Levels of LDL, intermediate-density lipoprotein (IDL), and very-low-density lipoprotein (VLDL) must be measured in the fasting state to be accurate, but nonfasting levels of HDL and total cholesterol generally are accurate. So rather than directly measuring LDL, IDL, and VLDL, the researchers proposed sidestepping the fasting requirement and calculating an overall "non-HDL" level by simply subtracting the nonfasting HDL level from the nonfasting total cholesterol level.

They tested this hypothesis in a study of 48 patients on long-term hemodialysis, 20 of whom (42%) had diabetes. This nonfasting, calculated "non-HDL" cholesterol level was found to be accurate, compared with direct measurement of fasting lipid levels, and now can be considered adequate for assessing dyslipidemia in dialysis patients.

PCI Takes Longer During Off-Hours

For MI patients, the interval between hospital arrival and percutaneous coronary intervention (PCI) reperfusion is substantially longer if they are stricken at night or on weekends than it is on weekdays, even at high-volume PCI centers. This is largely because most catheterization labs must summon staff from off-site during off-hours.

In contrast, the interval between hospital arrival and administration of fibrinolysis is no longer during off-hours than on weekdays, presumably because fibrinolytic therapy doesn't require the catheterization lab staff, according to David J. Magid, M.D., of the University of Colorado, Denver, and his associates (JAMA 2005;294:803-12).

They analyzed a national database including 68,439 patients given fibrinolysis and 33,647 given PCI at more than 1,000 U.S. hospitals; approximately two-thirds were treated during off-hours. Door-to-balloon times were 21 minutes longer on average during nights and weekends, and patients were markedly less likely to undergo PCI within the recommended 90 minutes if they presented during off-hours.

Cell Count Predicts CV Events, Death

A one-time measurement of the number of circulating endothelial progenitor cells can predict cardiovascular events and mortality, independent of traditional cardiovascular risk factors, reported Nikos Werner, M.D., and associates at the University of Saarland, Homburg-Saar, Germany.

Although researchers suspected that such progenitor cells in the peripheral blood might indicate endothelial regenerative capacity, they didn't know whether cell counts alone would be useful markers. Dr. Werner and associates obtained counts of CD34+KDR+ progenitor cells from arterial blood samples taken just before cardiac catheterization in 519 patients undergoing angiography, and then followed the patients for 1 year (N. Engl. J. Med. 2005;353:999-1007).

Subjects with low circulating numbers of these cells had significantly higher rates of first major CV events and mortality from CV causes, compared with those with high counts. The findings suggest that such counts constitute a new marker for risk stratification and also support "the underlying biologic concept that endothelial-cell regeneration through circulating progenitor cells is necessary for vascular healing," the investigators said.

Gender Predicts CABG Mortality

Women undergoing coronary artery bypass graft remain at higher risk for operative mortality than men, even after all known risk factors and a few theoretical ones are taken into account, reported Ron Blankstein, M.D., of the University of Chicago Hospitals, and his associates.

Their study was designed to gauge the influence of hundreds of potential confounding factors and to assess whether "all other factors being equal, there is a significant difference in operative mortality between men and women undergoing CABG." The analysis included data on 15,440 consecutive CABG patients at 31 hospitals in 1999-2000.

Before the data were adjusted for standard clinical risk factors, women were 90% more likely than men to die perioperatively. After adjusting for these risk factors—for example, women's much higher rates of valvular disease, chronic obstructive pulmonary disease, and diabetes—that discrepancy was reduced to 49%, the researchers said (Circulation 2005;112:323-7).

—Mary Ann Moon