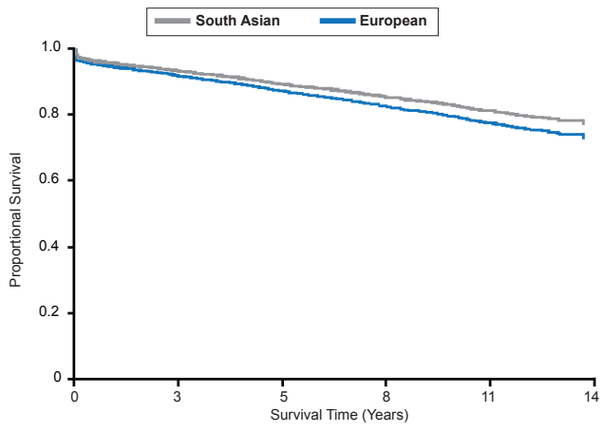
Figure 1. Comparison of Long-Term Mortality in South Asian and European ACS Patients



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Initial Data From CCS Registry Shows Low Complication Rate in Interventional Cases

Written by John Otrompke

Data collected during the first 4 months of the recently created Caribbean Cardiology Society (CCS) cardiac catheterization registry have found a low rate of reported complications, including a 2% rate of hematomas and no deaths, according to a presentation given by Victor Elliot, MBBS, DM, University Hospital of the West Indies, Mona, Jamaica. In 2014, physicians hope to receive data from all 13 cardiac catheterization labs participating from eight independent Caribbean nations that will better reflect the various peoples/nationalities represented in the Caribbean.

Dr. Elliot presented data from 265 cases performed at two centers collected during the first 4 months of the CCS Cardiac Diagnostic and Interventional Registry, which went online in January 2013.

Of those entered in the registry, 62% were male and the majority (63%) were aged 50 to 69 years; 15% were current smokers; and 61% were nonsmokers. Interestingly, 66% of the patients stated they were of South Asian descent, an observation that Dr. Elliot attributed to the population served by two centers that participated in this first collection of data. Another 23% of the patients were black, 4% were white, and 7% were of mixed racial background. Of the patient population as a whole, 22% had left-ventricular systolic dysfunction.

Of the 265 cases seen, 88% had diagnostic coronary angiograms. Of those that underwent angiography, surgical intervention was recommended in 22% of cases, while medical therapy was recommended in 36%. The remainder (42%) underwent percutaneous coronary intervention (PCI). The majority of catheterizations were elective (96%) and PCI was performed in 18% of elective cases.

Femoral artery access accounted for a little more than half of procedures (58%); while radial access was also frequent (42%). Brachial arterial access was utilized infrequently (1%). Complications in this population were low, and hematomas occurred in only 2% of cases. Vascular access closure devices were used in 5% of cases. For those patients with TIMI flow <3 who underwent PCI, the treating physician succeeded in establishing normal TIMI 3 flow in all cases.

This voluntary registry was initially proposed as part of a quality-improvement initiative in 2011. Data categories were designed to be consistent with those of Version 4.4 of the Cath-PCI Registry of the American College of Cardiology's National Cardiovascular Data Registry. The registry now includes data on 75 different variables in nine categories. Data is available online at www.ccscdi.com. While 13 catheterization laboratories in the Caribbean have agreed to participate, not all laboratories are currently contributing data due to concerns over legal issues, such as confidentiality, privacy and copyright. These concerns have been addressed and will continue to be reviewed as the registry grows. Continued efforts to expand participation across the Caribbean nations will be necessary to ensure the registry becomes an important tool for continued quality improvement and clinical research.

When to Consider Leptospirosis in Unexplained Myocarditis

Written by John Otrompke

Although the primary treatment for typical leptospirosis is antimicrobial therapy in the form of penicillin and doxycycline, assessment of left ventricular (LV) systolic function should also be performed in patients with this condition. Findings of new LV dysfunction (ejection fraction <50%) may provide evidence of associated myocarditis, which is an important finding. In addition, when patients such as farmers or others working closely with animals, present with unexplained myocarditis, the differential diagnosis should include leptospirosis according to Dabor Resiere, MD, Central University Hospital, Fort de France, Martinique.

Leptospirosis is an endemic disease in the Caribbean caused by Leptospira, a motile bacterium [Bharti AR et al. *Lancet Infect Dis* 2003] spread predominantly during rainy seasons as well as in the urine of infected animals such

as dogs. In its virulent forms, leptospirosis may lead to liver failure, renal failure, severe pulmonary hemorrhage, myocarditis, and death. In 2012, the Dominican Republic's Minister of Agriculture died of leptospirosis. Even today, 5% to 10% of patients with leptospirosis in the Caribbean may die from the disease.

Some patients may present with flu-like symptoms, but others patients may be relatively asymptomatic or have insidious symptoms making the onset difficult to discern. When patients present with fewer than 8 days of symptomatology, Dr. Resiere recommends a polymerase chain reaction (PCR) test for diagnosis; this has been available in Martinique since 2006.

If leptospirosis is diagnosed, physicians should evaluate for new LV systolic dysfunction (ejection fraction <50%) as the complication of myocarditis can be devastating. In patients presenting with cardiogenic shock, mortality approaches 40%. Practioners evaluating patients with leptospirosis should also have a high degree of suspicion for meningitis, encephalitis, and other neurological manifestations, which occur in 5% to 10% of patients.

Treatment of leptospirosis includes not only antibiotics but supportive therapy (eg, including fluid and electrolyte regulation) and monitoring for new complications.

To evaluate cases of leptospirosis in a single institution, Dr. Resiere and colleagues conducted a retrospective analysis, looking at data from 82 patients admitted to University Hospital in Martinique, 29% of whom were admitted prior to the institution of PCR tests for diagnosis, from 2001 to 2006, and 63% of whom were admitted between 2006 and 2010. Of 32 patients admitted to the intensive care unit for leptospirosis, the most frequent abnormal vital sign was tachycardia. He also noted that <10 of the 20 patients admitted to the hospital with this diagnosis after 2006 required intensive care [Mehdaoui H et al. *Critical Care* 2012].

Greater awareness could vastly reduce the mortality associated with leptospirosis in the Caribbean improving the timing of diagnosis and early institution of care. Physicians should carefully consider leptospirosis in those presenting with symptoms. For those with symptoms <8 days, the physician should perform a PCR test for the early diagnosis of leptospirosis, if available. In cases where leptospirosis has been confirmed, the physician should not merely prescribe antibiotic and supportive therapy, but should evaluate for cardiac involvement as myocarditis is associated with high mortality rate and requires specialized care.

CKD, CVD, and Lipids: Insights From the SHARP Trial

Written by **Mary Mosley**

Robert P. Giugliano, MD, SM, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts, USA, discussed the relationship between chronic kidney disease (CKD) and cardiovascular disease (CVD), and provided an overview of the SHARP trial, the largest study of lipid-lowering therapy in patients with CKD and CVD.

The National Kidney Foundation (NKF) defines CKD as kidney damage for ≥3 months with structural or functional abnormalities of the kidney, manifested either on pathology, or by clinical markers of kidney damage (eg, elevated creatinine). The patient may have a reduced glomerular filtration rate (GFR) <60 mL/min/1.73 m^2 for ≥3 months as well. In the United States, the vast majority of CKD patients are equally split between NKF Stages 1, 2, and 3 (GFR >90, 60 to 89, and 30 to 59 mL/min/1.73 m^2, respectively), with only ~0.3% falling into Stages 4 and 5 (GFR of 15 to 29 and <15 mL/min/1.73 m^2, respectively).

Diabetes and hypertension are the traceable causes of CKD in about two thirds of cases in the United States [http://www.kidney.org/kidneydisease/aboutckd.cfm. Accessed August 22, 2013]. Renal disease itself raises CV risk, and the severity of CKD is associated with the severity of CV risk.

According to data from the Kaiser Permanente Renal Registry of 1,120,295 adults, kidney function showed a linear increase in the adjusted risk of any CV event as the estimated GFR (eGFR) decreased [Go AS et al. *N Engl J Med* 2004].

The link between CKD and CV death is even stronger, with exponential increases in risk.

A GFR of 60 is associated with a 2-fold risk of CV death, while a GFR of 30 carries a 4-fold increase in risk. There is a 10- to 30-fold increased risk in patients on dialysis.

AGGRESSIVE LIPID LOWERING IN CKD

The results of three different observational studies have suggested that patients with CKD should receive aggressive lipid-lowering therapy. The US Renal Data System Morbidity and Mortality Wave 2 study reported a 36% reduction in CV death (RR, 0.64; 95% CI, 0.45 to 0.91) in the 9.7% of patients on a statin [Seliger SL et al. *Kidney Int* 2002]. The prospective, observational Dialysis Outcomes and Practice Patterns Study from dialysis centers across seven countries showed a significant 23% reduction in cardiac mortality (p=0.03) in the 11.8% of patients taking a statin [Mason NA et al. *Am J Kidney Dis* 2005]. Finally, the Pravastatin Pooling Project, a meta-analysis of clinical trials with pravastatin versus placebo, found a reduction in the composite of coronary heart disease death, myocardial infarction (MI), or revascularization (HR, 0.77; 95% CI, 0.68