

Canadian Cardiovascular Congress



Co-hosted by the Canadian Cardiovascular Society and the Heart and Stroke Foundation of Canada



PLEASE PLAN TO ATTEND

MONDAY, October 26

“Personalizing the Management of ACS: Matching Optimal Antiplatelet Therapy to the Right Patient at the Right Time”
7:00-9:00, Crowne Plaza Hotel, Alberta AB, Lobby Level

9:00-10:30 State-of-the-Art Session: “Antiplatelet Therapy in the Management of Ischemic Heart Disease” (Hall D, Pedway Level)

11:00-12:30 Implementation of the Canadian Heart Health Strategy (Hall D, Pedway Level)

12:30-14:00 Women in Cardiac Sciences Luncheon: “Women in the Professions - One Step Forward and Two Steps Back” (Fairmont Hotel MacDonald, Empire Ballroom, Lobby Level)

14:00-15:30 Guidelines and Position Statements (Salon 08, Meeting Level)

19:30 Edmonton City Night (Hall D, Pedway Level)

TUESDAY, October 27

“Optimizing Outcomes in ACS”
7:00-9:00, Delta Hotel Conference Centre, 3rd Floor

“5th Annual Medical Debate in Lipid Management – Meeting the Challenge of Evolving Evidence”
7:00-9:00, Crowne Plaza Hotel, Alberta AB, Lobby Level

9:00-9:45 John Keith Lecture: “Convergence of Human Genetics and Stem Cell Biology: The Future of Medicine” (Hall D, Sec. 1, Pedway Level)

9:45-10:30 Wilfred G. Bigelow Lecture: “Aortic Valve Repair – State-of-the-Art” (Hall D, Sec. 1, Pedway Level)

11:00-12:30 CIHR/ICRH Distinguished Lecture in Cardiovascular Sciences: “Stem Cells for Cardiac Regeneration” (Hall D, Sec. 1, Pedway Level)

14:00-15:30 Debates—Current Controversies in Cardiovascular Sciences (Hall D, Sec. 2, Pedway Level)

“A Global Perspective of Cardiovascular Disease Burden and Treatment”
18:30-21:30, Hall D, Pedway Level

WEDNESDAY, October 28

“Expert Opinions: Current Issues in Cardiology”
7:00-9:00, Westin Hotel, MB/SK, Banquet Level

9:00-10:30 Late Breaking and Featured Clinical Trials (Salon 08, Meeting Level)



Don't forget Edmonton City Night - Casino Royale tonight at 19:30 in Hall D, Pedway Level!

CCS Awards Night: Follow-up to Sunday night's gala

The CCS Awards held Sunday evening at the Fairmont Hotel Macdonald offered attendees a highly anticipated first glimpse of the award recipients who had not been announced before the Congress began, and a chance to congratulate them for their achievements firsthand.

Anemia Institute for Research and Education (AIRE) Award:
Dr. Robin Varghese

Canadian Society of Echocardiography Annual Achievement Award:
Dr. Bibiana Cujec

The Canadian Journal of Cardiology Dr. Robert E. Beamish Award:
Dr. G. B. John Mancini

ICRH Fellowship Award:
Dr. Subhadeep Chakrabarti



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INFO CARDIO

MONDAY EDITION

14th Anniversary of the Official Newspaper of the Annual Canadian Cardiovascular Congress
October 24-28, 2009 / Edmonton, Alberta



CCC OPENING CEREMONIES

Opening ceremonies: Dr. Malcolm Arnold and Sally Brown; (left to right from the top) Alberta Premier Ed Stelmach, Edmonton Mayor Stephen Mandel, Dr. Michael Chan, Dr. Evan Lockwood, Dr. Robert Hegele, Dr. Charles Kerr.

One step forward, two steps back: Women in high-powered professions rethinking their careers

High-powered professions, including medicine, law and politics, need to do a better job reaching out to women or risk losing the best and brightest of new recruits to the demands of daily living.

“When I left politics a number of years ago and joined a law firm, I became aware of a growing concern within the profession that a disproportionate number of women were leaving the private practice of law, usually around the time when they were being considered for partner,” relates the Honourable A. Anne McLellan, PC, OC, former Deputy Prime Minister of Canada and former Federal Minister of Health. Ms. McLellan will be delivering the Women in Cardiac Sciences lecture this year.

Having herself transferred from one demanding career to another, Ms. McLellan started asking herself why these women were leaving, especially because they were often the best and brightest of their class. What it often comes down to, she feels, is that delicate “work-life” balance that women, still the primary caregivers in their families, seem to struggle with more directly than men. Women might be eager to adhere to the demands of their firm for the first few years of their careers, but then around the seven-year mark, these prospective partners, now in their late 20s and early 30s, start to think about starting families.

Even if women don't leave the profession entirely, they often either move to smaller firms which offer more flexible work hours or go into some other form of law where hours are at least predictable. Alternatively, some choose another career entirely that allows them to work around the demands of home and family more easily.

These issues appear not to differ substantively in either politics or medicine, Ms. McLellan suggests. (On the other hand, because physicians are relatively

autonomous, she feels that women in medicine may well be ahead of the curve, as many are already choosing to work differently.) Women might look to policy-makers, those who regulate the professions or those who manage law firms or practices for a more accommodating workplace structure that allows them to exercise their career talents and take care of family.

It seems, however, that those who control workplace structures have been slow to adapt those structures to the needs and realities of many women's lives. One hopeful trend that seems to be emerging across the professions is a change in the attitude of young men. In

a recent survey carried out by the Law Society of Alberta, there was little difference between male and female respondents in terms of how much they wanted to work—and how much they wanted a “life” outside their central career.

The Law Society of Upper Canada recently recommended the adoption of a long-honoured practice in medicine, where physicians bring in a locum to carry on their practice when they take time off for child-bearing and rearing.

“In these professions, seen as powerful and influential, there are troubling trends today,” Ms. McLellan observes. “Employers and regulators of professions need to be aware that as more and more women work in these areas, they are going to have to rethink how the workplace is structured. Otherwise, we as a society risk losing the best and the brightest.” □

The Honourable A. Anne McLellan will be delivering the Women in Cardiac Sciences Lecture on Monday, October 26, 12:30-14:00 (Fairmont Hotel Macdonald, Empire Ballroom, Lobby Level).

First international guidelines on genetic testing for inherent arrhythmias to be released during CCS session

The first international guidelines on the appropriate use of genetic testing for common genetic syndromes causing sudden cardiac death (SCD) will be released during the special CCS session on guidelines and position statements Monday afternoon.

Dr. Michael Gollob, Director, Inherited Arrhythmia Clinic and Research Laboratory, University of Ottawa Heart Institute, Ontario, will present guidelines that represent the consensus of a Canadian panel of experts on pediatric and adult arrhythmias, geneticists, genetic counselors and medical ethicists. “The mandate of the panel was to formulate disease-specific recommendations for the use of—or lack of use of—genetic testing in the clinical care of patients and families with documented or suspected genetic conditions associated with sudden cardiac death,” as experts point out in their introduction to their guidelines.

As the authors note, the clinical value of genetic testing was primarily considered with reference to the potential yield of positive and interpretable genetic findings, as well as whether the genetic information would be of value to patients. “Many of the conditions that we are discussing in this document did not have the option of genetic testing to confirm the diagnosis and screen potentially affected family members 20 years ago,” Dr. Gollob told *INFO-Cardio*.

Since then, the field of genetics in general has expanded substantially, including knowledge in the field of cardiovascular genetics. With the advent of numerous commercial for-profit genetic testing facilities, however, enthusiasm



Dr. Michael Gollob

for these novel tests have often ignored the usefulness of genetic testing, the role of patient counselling, ethical considerations and cost-effectiveness of carrying out such tests; in many situations, where the diagnosis of the underlying genetic disorder is obvious, there is no need for any further testing, although it may still be useful to screen asymptomatic family members and identify others who may harbour an inheritable disorder.

“The future is promising in that such knowledge may be translated into novel therapeutic approaches to offset the risk of fatal events,” panel members write, “but there is a need for clear recommendation guidelines on the appropriate use of genetic testing... first and foremost to ensure that we are providing the most thoughtful

approach to our patients and their families.” □

The CCS guidelines and position statement session takes place Monday, October 26, 14:00-15:30, Salon 08, Meeting Level.

John Keith Lecture: human genetics, stem cell biology the future of medicine



Dr. Deepak Srivastava

The future of medicine will be shaped by the convergence of human genetics and stem cell biology. Dr. Deepak Srivastava, Director, Gladstone Institute of Cardiovascular Disease and Wilma and Adeline Distinguished Professor of Pediatrics, University of California at San Francisco, has already made substantial contributions to the field and will deliver this year's John Keith Lecture.

As Dr. Srivastava writes in *Cell* (2006;22:1037-48), the heart is perhaps the most studied of all organs and the one most susceptible to disease. “A molecular framework has emerged to explain the commitment of unique lineages to distinct regions of the heart and the underlying decisions of cell migration, proliferation and death that guide the three-dimensional events of cardiac development,” he adds. Underpinning it all are genetic networks which are susceptible to a variety of mutations; depending on the specific mutation involved, errors in the genetic blueprint of life give rise to common congenital heart abnormalities including atrial and ventricular septal defect,

pulmonary stenosis and tetralogy of Fallot.

As Dr. Srivastava observes, one of the most severe forms of congenital heart disease involves hypoplasia of the right or left ventricle. “Studies in model organisms have begun to reveal a genetic basis for ventricular development,” he notes, and models of mouse heart development indicate that deletions in a specific gene set are expressly involved in aberrant ventricular development. Far less is known about the genetics of atrial development, he adds, but in Ebstein's anomaly in humans, the right atrioventricular valve is displaced inferiorly into the ventricle, resulting in the “atrialization” of ventricular myocardium. It will thus be “interesting,” as Dr. Srivastava observes, to determine whether the gene responsible for Ebstein's anomaly is involved in atrioventricular specification. “Given the complexity of cardiac development and the devastating consequences of even subtle perturbations in the process, it is not surprising that mutations in... a large number of genes can cause cardiac malformations,” he writes in an earlier review (*Nature* 2000;407:221-5).

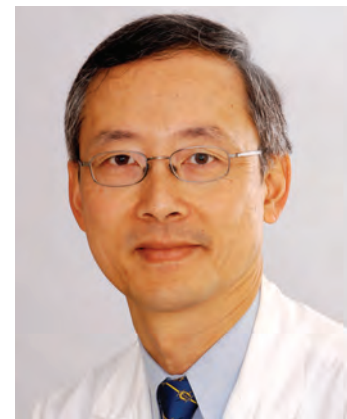
Dr. Srivastava, among others, has also shown that genetic disruptions which predispose infants to developmental cardiac defects can have ongoing consequences in adulthood. He reports that patients who have survived cardiac malformations as infants and children are now entering their third and fourth decade of life where new disease processes in survivors are becoming apparent. For example, 1% to 2% of individuals worldwide are born with a bicuspid aortic valve, although these abnormalities are usually silent in childhood. But among those harbouring silent malformations, approximately one-third of bicuspid aortic valves develop premature, age-dependent calcification, “resulting in poorly mobile, non-functioning valves later in life,” as Dr. Srivastava states. Interestingly, calcification of the aortic valve is the third leading cause of heart disease in adults.

The recent discovery that NOTCH1 mutations in humans cause bicuspid aortic valves and subsequent calcification indicates that early development and later degenerative disease can share a common genetic cause, as Dr. Srivastava states. “With increasing recognition that congenital heart disease has a significant genetic contribution, we can imagine that genetic variation underlies both the morphogenetic defect and the predisposition to long-term consequences that will affect clinical outcomes for millions of congenital heart disease survivors,” he observes.

Parallel advances in stem cell biology are similarly poised to usher in a new era of novel therapeutic strategies, including infusion of stem cell-derived cardiac cells into damaged hearts, and the use of disease-specific induced pluripotent stem cells to understand disease mechanisms and identify new drug therapies. □

The John Keith Lecture takes place Tuesday, October 27, 9:00-9:45, Hall D, Sec. 1, Pedway Level.

Chinese language patient tools program, a multicultural heart health initiative



Dr. William Hui

The first in what is expected to be many multicultural heart health initiatives will be officially launched Monday morning by the Honourable A. Anne McLellan, PC, OC, former Deputy Prime Minister of Canada and former Federal Minister of Health, to take place at the Shaw Conference Centre at 11:00.

The Chinese language patient tools program grew out of findings from a 2004 study carried out by Dr. Chi-Ming Chow, Assistant Professor of

Medicine, University of Toronto, Ontario. He and co-investigators found that approximately one-third of Chinese respondents polled in Toronto and Vancouver could not name at least one symptom of a heart attack, while approximately 40% could not name any symptom of a stroke. “When asked about their response to a myocardial infarction or stroke, only 20% of respondents would have called 911,” Dr. William Hui, Chief of Cardiology, Royal Alexandra Hospital, Edmonton, told *INFO-Cardio*, “so there are major education gaps in the community's understanding of cardiovascular disease (CVD).”

During the years when the survey was carried out and published last year, Dr. Chow, along with Dr. Gordon Moe, Associate Professor of Medicine, University of Toronto, took on the huge task of translating into Chinese all relevant patient educational tools offered by the Heart and Stroke Foundation of Ontario in English to the public. “They also developed Web videos which are available on the Heart and Stroke Foundation of Ontario's Web site,” Dr. Hui added, “and they developed a quarterly Chinese Heart Health Newspaper in conjunction with the Heart and Stroke Foundation of Ontario.”

Inspired by their efforts, Dr. Hui himself decided to launch a Chinese language patient tool program in Alberta with the endorsement and funding of the Royal Alexandra Hospital Foundation, a charitable foundation which supports program activities at the hospital. With his own and his wife's recent donation to the foundation, The Royal Alexandra Hospital Foundation was newly renamed the C.K. Hui Heart Centre after Dr. Hui's father.

“This is the first of the multicultural heart health initiatives we are going to promote and the Honourable Anne McLellan, who is part of the fundraising campaign for the C.K. Hui Heart Centre, will be there to make this announcement,” Dr. Hui confirmed. □



Joint CCS/ACC Symposium – “Brain and Heart Interactions”



Dr. Andrew Demchuk

Dr. Andrew Demchuk, Director, Calgary Stroke Program, and Associate Professor of Clinical Neurosciences, University of Calgary, Alberta, predicts that specialists are moving towards a field of vascular medicine where the approach to different manifestations of vascular disease will more closely resemble each other.

Certainly, stroke is unique compared with heart disease, as he told *INFO-Cardio*, with atherosclerosis responsible for only about 25% of all strokes vs. at least 90% of all myocardial infarctions (MIs). Risk factors for both conditions often overlap but the relative contribution of individual risk factors to each varies considerably, with hypertension accounting for a significantly greater proportion of strokes than MIs. There are also different types of stroke and the risk factors implicated in the various types differ as well.

Still, as Dr. Demchuk explained, just as treatment of acute MI has evolved from an intravenous (i.v.) drug-based approach to an endovascular-based one, so, too, is stroke changing along the same lines. As he observed recently (*Lancet Neurology* 2009;8:778-9) with colleague Dr. Bijoy Menon, the combination of i.v. alteplase plus an endovascular approach in stroke patients led to significantly higher recanalization rates than i.v. alteplase alone, suggesting the combination strategy may improve outcomes following stroke.

Assessment and treatment of transient ischemic attacks (TIAs) has also evolved over the past decade, as Dr. Demchuk notes. In an important trial, results from the Fast Assessment of Stroke and Transient Ischemic Attack to Prevent Early Recurrence (FASTER) study showed that the use of both ASA and clopidogrel immediately after a TIA or a minor stroke, when patients are at high risk of stroke, reduced the risk of secondary stroke without increasing the risk of hemorrhage.

Other research carried out by Dr. Demchuk and colleagues showed that magnetic resonance imaging should be the preferred test for diagnosis of patients with suspected acute stroke, as it is more accurate than CT scans for the detection of acute ischemia as well as acute and chronic hemorrhage. □



Dr. T. Douglas Bradley

Sleep apnea and heart failure

Between 25% and 40% of heart failure patients have central sleep apnea (CSA), a condition that adversely affects CV function and independently increases the risk of death. As Dr. T. Douglas Bradley, Director, Centre for Sleep Medicine and Circadian Biology and Professor of Medicine, University of Toronto, Ontario, has discussed in several publications, the use of continuous positive airway pressure (CPAP) in heart failure patients showed that CPAP attenuated apnea, increased ejection fraction and improved distance walked in 6 minutes but it did not affect survival (*Circulation* 2007;115:3173-80). However,

when researchers carried out a stratified analysis of the same cohort, they found that 57% of patients in whom CPAP reduced the apnea hypopnea index (AHI) to less than 15 had an improvement in ejection fraction and transplant-free survival compared with those in whom CPAP did not reduce the AHI to the same level, among whom there was no improvement in either end point. CPAP therefore may improve ejection fraction and heart transplant-free survival in heart failure patients with CSA provided CSA is suppressed soon after its initiation, as Dr. Bradley and colleagues concluded.

Researchers also studied the use of CPAP in heart failure patients with obstructive sleep apnea (OSA). They found that CPAP markedly reduced OSA, along with daytime systolic BP (126 to 116 mm Hg), heart rate (68 to 64 bpm) and left ventricular end systolic dimension (54.5 to 51.7 mm), among patients who in addition to optimal medical therapy, received additional CPAP for one month (*N Engl J Med* 2003;348:1233-41). Ejection fraction also improved from 25% to 33.8% over the 30-day study interval. Because CPAP reduced the frequency of obstructive events and arousals, and improved arterial oxygenation during sleep, researchers attributed the improvement in CV parameters primary to the alleviation of OSA. Regarding the influence of OSA on mortality in heart failure patients (*J Am Coll Cardiol* 2007;49:1625-31), Dr. Bradley and colleagues again found that in this patient population, it was associated with an increased risk of death over 7.3 years of follow-up independent of known risk factors. □

Short-term stress and MI



Dr. Robert Kloner

The fact that even short-term stress is associated with an increased risk of MI was initially reported in 1999 by Dr. Robert Kloner, Professor, Keck School of Medicine, University of Southern California, and Director, Research Heart Institute, Good Samaritan Hospital, Los Angeles, when he and colleagues sought to determine whether there were reasonable variations in cardiac mortality in Los Angeles where the winter is mild. As he noted in his findings (*Circulation* 2004;110:3744-5), when the group plotted daily death rates from ischemic heart disease in Los Angeles County during November, December and January, they were intrigued by the increase in CV mortality that began around Thanksgiving and which continued to climb

through Christmas, peaking on New Year's Day, after which death rates fell.

Changes in diet and alcohol intake might explain some of this excess in cardiac mortality, as Dr. Kloner observed. But as he and his colleagues documented more recently (*Am J Cardiol* 2009;103:1647-50), an analysis of local total death rates as well as mortality due to circulatory diseases, including ischemic heart disease, in Los Angeles County increased in days surrounding the loss of the Super Bowl by the Los Angeles Rams in 1984 compared to control days. In contrast, all-cause death rates were lower compared with control days during the days surrounding the Super Bowl in 1984, when their team won. In similar findings, a recent study carried out by German researchers also documented an increase in CV events among fans watching the German team play stressful soccer matches.

Interestingly and to Dr. Kloner's surprise, no increase in cardiac death rates was seen in association with the destruction of New York City's Twin Towers of September 11, suggesting that simply watching a remote event in the absence of direct emotional attachment might not be stressful enough to cause an increase in cardiac death. □

Psychological stress and CVD risk



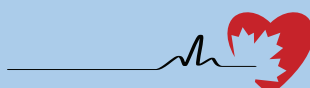
Dr. Joel Dimsdale

Dr. Joel Dimsdale, co-leader of the Cancer Symptom Control Research Center, USCD Moore Comprehensive Cancer Center and Professor of Psychiatry, University of California, San Diego, also discussed the effect of short-term and chronic stress on CVD risk.

In his review of psychological stress and CVD (*J Am Coll Cardiol* 2008;51:1237-46), he noted that on the day of the Northridge, California, earthquake in 1994, the daily numbers of deaths attributed to CVD increased dramatically compared with the same date in previous years. Studies indicate that minutes after an earthquake, survivors can experience pronounced increases in heart rate (HR), blood pressure (BP) and blood viscosity, all of which predispose individuals to adverse CV events.

Chronic stress, believed to be a reaction to everyday hassles that undermine a person's morale, has also been associated with adverse health consequences. As Dr. Dimsdale pointed out, during the siege of Leningrad, for example, the BP of citizens increased dramatically and the effect of the siege, coupled with its starvation conditions, led to an increase in CV mortality even 50 years later among siege survivors. The global INTERHEART study found that participants who reported permanent stress at work or at home were at least twice as likely to experience a MI than those who were not permanently stressed.

Many of the stressor studies reviewed by Dr. Dimsdale indicate that stress is at least if not more powerful a risk factor for CVD as cholesterol. But as he also suggests, stress can be modified through a number of approaches, including meditation or regular exercise, and patients at risk for an adverse CV event should be referred to professionals who can help them make positive changes in their behaviour and cognition. □



CACR Keynote Address: Practitioners need to promote regular exercise as key therapy for patients with diabetes



Dr. Ron Sigal

Practitioners can help heighten awareness of the importance of physical activity among patients with diabetes by promoting regular exercise as a key component of therapy, according to keynote speaker at the Canadian Association of Cardiac Rehabilitation (CACR) meeting, endocrinologist Dr. Ron Sigal, Associate Professor of Medicine, Cardiac Sciences, Kinesiology and Community Health Sciences, University of Calgary.

In his address, he will discuss new diabetes guidelines as they pertain to exercise in an effort to improve cardiorespiratory fitness in patients with type 1 and type 2 diabetes and lessen disease-related morbidity and mortality. “Moderate to high levels of physical activity and cardiorespiratory fitness are associated with substantial reductions in morbidity and mortality in both men and women and in both

type 1 and type 2 diabetes,” writes Dr. Sigal and colleagues in guidelines on physical activity and diabetes (*Can J Diabetes* 2008;32:S37-S39).

However, before patients embark on a physical activity program more vigorous than walking, they should be assessed for conditions such as severe autonomic neuropathy; severe peripheral neuropathy and preproliferative or proliferative retinopathy—all of which require treatment prior to patients engaging in vigorous exercise. Similarly, an ECG stress test may be considered for previously sedentary patients at high risk for CVD if they want to do more than walk briskly.

“Walking is the most popular and most feasible type of aerobic exercise in most overweight, middle-aged and elderly people with diabetes,” guideline authors confirm. For most patients, moderately brisk walking on level ground would represent moderate

aerobic exercise, while brisk walking up an incline or jogging would be considered vigorous aerobic exercise. Other examples of moderate exercise might include cycling, continuous swimming and water aerobics, while other forms of vigorous activity include hockey, basketball, and fast swimming and dancing.

At the same time, experts recommend that patients participate in resistance training two or three times a week. Resistance training can be expected to increase strength and vigour, reduce body fat and increase resting metabolic rate and the effects of resistance exercise and aerobic exercise are additive. “During and after all but the most intense exercise, blood glucose tends to decline due to increased glucose disposal and insulin sensitivity,” the authors note, “while exercise late in the day can be associated with increased risk of overnight hypoglycaemia in patients with type 1 diabetes.” Patients with type 1 diabetes therefore should be counselled to consume extra carbohydrates for exercise; limit their preprandial bolus insulin dose or alter basal insulin for insulin pump users or any combination of these strategies. Time and intensity of the exercise program have also been spelled out in the new guidelines. For anyone with diabetes (types 1 and 2), individuals should accumulate a minimum of 150 minutes of moderate to vigorous-intensity aerobic exercise each week, spread over at least three days of the week, with no more than two consecutive days without exercise.

They (including the elderly) should also be encouraged to perform resistance exercise three times per week in addition to aerobic exercise, although initial instruction and periodic supervision by an exercise specialist are recommended. “Structured physical activity counselling by a physician or skilled healthcare personnel or case managers has been very effective in increasing physical activity, improving glycemic control, reducing the need for oral antihyperglycemic agents and insulin and producing modest but sustained weight loss,” the authors conclude. □

The CACR presentation will take place Sunday, October 25, 9:30-10:00 (Westin Hotel, MB/SK, Banquet Level).

2009 Canadian Cholesterol Guidelines: the new lipid targets

Significant modification in lipid targets are among the most important changes to be featured in the new Canadian Cholesterol Guidelines of 2009, presented here on Sunday during a special workshop in which the guidelines were reviewed.

In a published summary of the new recommendations (*Can J Cardiol* 2009;25(10):567-79), Genest et al. laid out primary management strategies for the control of lipid parameters in patients at risk for cardiovascular (CV) events. Following initial screening, the guidelines again indicate that physicians should continue to determine individual CV disease risk using the Framingham risk score (FRS) modified for family history. In men older than 50 years of age or women older than 60, both of intermediate risk whose LDL-C does not already indicate they require treatment, high-sensitivity C-reactive protein (hs-CRP) can be used for risk stratification. Once a patient’s level of risk has been determined, the main target in lipid management remains LDL-C. However, targets of therapy have been modified from previous guidelines, as follows:

Targets of Therapy	
Risk level	Primary target: LDL-C
High CAD, PVD atherosclerosis Most patients with diabetes FRS of 20% or more ≤ RRS of 20% or more	<2.0 mmol/L or ≥50% reduction in LDL-C Apo B <0.80 g/L
Moderate FRS 10% to 19% LDL-C >3.5 mmol/L TC:HDL-C >5.0 hs-CRP >2 mg/L in men >50 years in men >60 years of age in women Family history and hs-CRP Modulate risk	<2.0 mmol/L or ≥50% reduction in LDL-C Apo B <0.80 g/L
Low FRS <10%	≥50% reduction in LDL-C

Once LDL-C is at goal, optional targets include a total cholesterol:HDL-C ratio <4.0; a non-HDL-C of <3.5 mmol/L; triglycerides <1.7 mmol/L; an apolipoprotein (Apo) B:Apo A1 ratio <0.80; and an hs-CRP protein <2 mg/L. However, as guideline authors note, clinical trial evidence is lacking supporting the benefit of achieving these secondary targets so clinical judgement is warranted.

Physicians should also exercise judgement when implementing statin therapy. Meta-analysis of statin trials show that for each 1.0 mmol/L decrease in LDL-C, there is a corresponding 20% to 25% relative risk reduction in events, and patients whose 10-year risk for CV disease is only 5% to 9% still achieve the same relative risk reduction from statin therapy as those at higher 10-year risk, although the absolute benefit of therapy is estimated to be smaller in low-risk patients. In high-risk patients, pharmacological therapy is indicated concomitant with lifestyle change including smoking cessation, reduced saturated fats and refined sugars, weight reduction and maintenance, daily exercise and stress management. Lifestyle changes may be implemented first in moderate-risk patients, followed by medication if targets are not reached. Most lipid-lowering medications are well tolerated, as the guideline authors indicate, but serum transaminase and creatinine kinase should be followed every six to 12 months or when symptoms develop. Follow-up is not required if levels are consistently normal and the patient has no symptoms. □

CCC 2009 Clinical Pearls

HDL cholesterol predicts one-year survival in PCI patients. Moretti et al. concluded that HDL-C is a “profound predictor” of all-cause mortality one year after patients underwent primary PCI. The authors based their conclusion on a prospective, observational study involving 553 patients who underwent revascularization by PCI and who were divided into those with a pre-interventional HDL-C of under 1.03 mmol/L vs. those with an HDL-C of 1.03 mmol/L or greater. Although patients with HDL-C <1.03 mmol/L were younger, less likely to be female, more likely to smoke and have a higher body mass index than those with higher baseline HDL-C levels, 4.4% of patients with HDL-C levels <1.03 mmol/L had died at one year vs 1.9% of those with HDL-C levels of 1.03 mmol/L or greater. The authors suggested that HDL-C levels be measured in all patients prior to PCI to better gauge mid-term prognostic outcomes. (Poster 656)

The benefits of a simplified method for CPR training of medical professionals: A controlled randomized study. Allan et al. found that teams of medical and nursing students who were trained and tested using defibrillator feedback performed better-quality CPR compared to teams who were trained and tested without defibrillator feedback (a feedback defibrillator measures chest compression depth and rate). All three teams received a 2-hour training session followed by a 5-minute simulated cardiac arrest scenario, but one group trained with a defibrillator equipped with visual and audible real-time feedback; a second group used a defibrillator that did not provide feedback; and the third group was trained with the feedback defibrillator but were tested using the non-feedback defibrillator. As measured by the average rate of compressions, the average depth of compressions and the percentage of time in which compressions were performed over a 5-minute test interval, results suggest that training modalities using similar real-time audiovisual feedback should be developed for all types of responders in an effort to improve CPR skills. (Poster 104)

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