T he cause and correction of heart failure varies from patient to patient and physicians need to develop a treatment plan that is tailored to an individual’s specific pathology using multimodality imaging as their guide. Prof. Jeroen Bax, Director of Non-invasive Imaging and the Echocardiography Laboratory, Professor of Cardiology, Leiden University Medical Center, The Netherlands, will deliver this year’s State-of-the-Art lecture on Monday morning entitled “Multimodality Imaging in Heart Failure.”

Heart failure is currently one of the greatest problems in clinical cardiology—the result, paradoxically, of far more effective treatments for myocardial infarction (MI) than ever before and of an aging population. Indeed, some 80% of heart failure is secondary to coronary artery disease, Prof. Bax tells INFO-Cardio. “And in order to treat these patients, a comprehensive analysis using non-invasive imaging is needed to offer patient-tailored therapy,” he notes.

Multimodality imaging is the tool by which physicians can pinpoint the underlying pathology of heart failure. The initial step is to determine the etiology of heart failure. The initial step is to determine the etiology of heart failure. Once stenoses have been identified, detection of ischemia is needed to justify revascularization (with either PCI or CABG). In the presence of a chronic total coronary occlusion, detection of residual myocardial viability is mandatory. If present, revascularization (with either PCI or CABG). In the presence of a chronic total coronary occlusion, detection of residual myocardial viability is mandatory. If present, revascularization (with either PCI or CABG).

Invasive angiography remains the cornerstone in the determination of the presence or absence of coronary artery disease is necessary. Invasive angiography remains the cornerstone in the determination of the presence or absence of coronary artery disease is necessary. Invasive angiography remains the cornerstone in the determination of the presence or absence of coronary artery disease is necessary. Invasive angiography remains the cornerstone in the determination of the presence or absence of coronary artery disease is necessary.

Thanks to this year’s supporters! AstraZeneca Canada Inc. Boehringer Ingelheim (Canada) Ltd. Eli Lilly Canada Inc. Pfizer Canada Inc. sanofi-aventis Canada Inc.
The CCS continues to award excellence with its 2010 celebration of Canadian contributions to the field. This year’s awards go to the following recipients:

Dr. Gilbert Tang: Trainee Excellence in Education Award. Dr. Tang is chief resident in the cardiac surgery program, University of Toronto. As former Chair for Trainee Day in 2008, medical director for the Advanced Cardiac Life Support program with the HSFC and representative for the residency program committee in cardiac surgery at the University of Toronto, Dr. Tang has considerable hands-on training experience that he enjoys sharing with trainees. Dr. Tang also encourages trainees to travel to learn new skills, as he recently did when he visited the renowned heart centre in Leipzig, Germany, to learn how to perform percutaneous valve surgery.

Dr. Sébastien Bonnet: Young Investigator Award, Basic Science. Dr. Bonnet, Professor of Medicine, Université Laval, and Canada Research Chair in Vascular Remodelling Diseases, has focused his research attention on the etiology of pulmonary hypertension (PH) by indentifying an important protein, pim-1, that is found at higher than normal levels in patients with PH. The higher the pim-1 levels, the more severe the PH. The protein is expressed in blood, making it a potentially valuable biomarker and diagnostic tool for PH, something that currently does not exist. Dr. Bonnet also found that blocking pim-1 reverses PH in animal models, opening up potentially new targets for this difficult-to-treat disease.

Dr. Zamanah Kassiri: Young Investigator Award, Basic Science. Dr. Kassiri is Assistant Professor at the Mazankowski Alberta Heart Institute and has been involved in exploring the mechanism that connects the heart's cells and synchronizes them into a single working pump. Specifically, Dr. Kassiri and her team are studying tissue inhibitors of matrix metalloproteinases (TIMPs) that regulate the integrity of the extracellular matrix. So far, they have found that TIMP levels are reduced in injured hearts as well as each of the four different TIMPs that contribute to the maintenance of the extracellular matrix. The team is now injecting individual TIMPs into hearts to validate their different effects.

Dr. Jack Sun: Young Investigator Award, Clinical Science. Originally from McMaster University, Dr. Sun, now Transcatheter Cardiovascular Surgery Fellow at the Brigham & Women’s Hospital in Boston, came naturally by his interest in antiplatelet therapy, ASA specifically. He has just completed a pilot study of 100 post-CABG surgery patients to try and identify an agent that would complement the activity of ASA in the prevention of post-CABG thrombosis and also prevent deep-vein thrombosis. The aim is to reduce short-term graft failure rates at 30 days.

Dr. Andrew Pipe: Dr. Harold N. Segal Award of Merit. Dr. Pipe, Medical Director, University of Ottawa Heart Institute Minto Prevention and Rehabilitation Centre, is almost synonymous with smoking cessation in Canada. As a member of the Order of Canada, he is also, among many other roles, the architect of the Ottawa Model for Smoking Cessation, which uses a systematic approach to identify smokers, offer cessation assistance, address withdrawal symptoms and provide follow-up support. The model is also integrated into institutional practice and helps health care professionals recognize that smoking cessation is their responsibility regardless of their field in medicine.

Dr. Martin Green: Distinguished Teacher Award. As Director of the Electrophysiology and Arrhythmia Fellowship program, University of Ottawa Heart Institute, Dr. Green has long pursued the desire to inspire others and contribute to their future as his own teachers did for him. His presentations on electrophysiology contain everyday analogies: by comparing ion channels to open windows in Ottawa in the winter, for example, attendees intuitively understand that hot air rushes out when the windows are open the same way sodium ions rush out of the cell. The key to teaching, according to Dr. Green, is to understand the needs of the audience and simplify.

Dr. Philippe Pibarot: Research Achievement Award and the Canadian Society of Echocardiography Annual Achievement Award. Dr. Pibarot, Professor of Medicine, Université Laval, and Canada Research Chair in Valvular Heart Disease, started working with Dr. Louis-Gilles Durand on prosthetic valves for humans following his internship. Through him, Dr. Pibarot subsequently met renowned cardiologist Dr. Jean Dumensil and the three have been working on aortic valve stenosis and prosthetic heart valves ever since. Until recently, surgery to replace the valve was the only solution and timing of that surgery is critical. Pibarot, Dumensil and their collaborators have been using Doppler echocardiography to develop novel, accurate markers of disease severity that help determine the best timing for that surgery. They have also published important information on prosthesis-patient mismatch.

Dr. Hugh Scully: Annual Achievement Award. Dr. Scully is Professor of Surgery and Health Policy, University of Toronto, and former Chief of Staff, Deputy Surgeon-in-Chief and senior staff in cardiothoracic surgery at the UHN/Toronto General Hospital. He is the only physician to have served as president of a provincial medical association, a major specialty society (the CCS) and the Canadian Medical Association; as a member of the Council of the Royal College of Physicians and Surgeons of Canada and of the Council of the World Medical Association. As medical director of the Formula One Grand Prix of Canada in Montreal from 1978 to 1991, Dr. Scully has made significant contributions to the improvement of safety in the high-performance field of car racing and he was the first of only two physicians elected to the Canadian Motorsport Hall of Fame.

C-CHANGE Program Workshop: First harmonized, evidence-informed CVD recommendations

The first harmonized, evidence-informed, cardiovascular disease (CVD) prevention and treatment recommendations targeted to primary care practitioners will be presented during the C-CHANGE Program Workshop scheduled for Tuesday afternoon.

The Canadian Harmonized National Guideline Endeavour (C-CHANGE) is a comprehensive and integrated CVD prevention program in which major CVD organizations in Canada have all played a role. Founded by the Institute of Circulatory and Respiratory Health, the Canadian Vascular Coalition and the Public Health Agency of Canada, the C-CHANGE guideline panel have worked together to produce recommendations for screening and management strategies for CV risk factors and disease, and the first round of these harmonized recommendations will be discussed at this workshop.

National clinical practice guidelines that will be included in this program will address cardiac and stroke rehabilitation, diabetes, dyslipidemia, hypertension, obesity, physical activity and smoking cessation—all relevant CVD risk factors. As the C-CHANGE panel note, given the wide range of CVD prevention recommendations, it is necessary to develop a co-ordinated, harmonized approach to the various guidelines so that they are complementary, not contradictory.

It is subsequently hoped that harmonization of clinical practice recommendations across these disparate guidelines will enhance both their implementation in primary care practice and improve patient outcomes.

C-CHANGE Program Workshop takes place Tuesday, October 26, 16:00-17:30 (Palais des congrès, Rm. 519AB).
Women in Cardiac Sciences: Courage and conviction help women stay the course in cardiac science

According to Dr. Renu Virmani—guest speaker at this year's Women in Cardiac Sciences lecture entitled "The Overall Success of Women in Cardiac Medicine"—women's achievements in cardiac science have never "go with the flow" but say what they mean and stick to it. They also should appreciate the important role of mentors throughout their career.

Currently President and Medical Director, CVPath Institute, Gaithersburg, Maryland, Dr. Virmani, as the youngest of 10 children, emigrated to the US in 1974, and progressed quickly: she redid her residency and earned her board certification with the American Board of Anatomic Pathology in 1978. She continued on to her chosen career in cardiovascular pathology, first with the Armed Forces Institute of Pathology in Washington, D.C., then to Georgetown University, the University of Maryland and the Uniform University of Health Sciences, the latter three institutions to which she is still affiliated as Clinical Professor of Pathology.

Along the way, she met many who inspired her, perhaps none more so than Dr. William C. Roberts, the well-known cardiovascular pathologist. She also greatly admired Dr. Bemadine Healy, a former director of the National Institutes of Health and still "one of her heroes." "It makes a difference for women to know other women who have made it so far up," she says, adding that there are still not that many top female researchers studying the medico-scientific and ethical aspects of cardiovascular disease.

A quick literature search reveals that Dr. Virmani has made tremendous contributions to the field of atherosclerosis—how it develops, how it progresses and how it eventually manifests in clinical sequelae. Among her most important contributions to current understanding of atherosclerosis was derived from her analysis of lesions taken from patients following sudden coronary death.

As Dr. Virmani writes in a description of her work, she and her colleagues identified plaques that were difficult to categorize by the current AHA classification scheme and they went on to develop a simplified classification scheme based on descriptive, morphologic, with minimal implication of the mechanisms involved. This new classification scheme highlighted specific morphologic events that could be appropriate targets for the development of either animal models or human diagnostic procedures, which in turn would permit researchers to test hypotheses as to the final states of the disease.

As Dr. Virmani and her colleagues observed, the most important events leading up to the clinical manifestation of atherosclerosis include erosion, rupture, thinning of the fibrous cap and the development of a procoagulable and thrombotic environment. Categorization of these lesions largely depends on the status of the fibrous cap and they hypothesized that thinning of this fibrous cap results from pro-inflammatory activity of macrophages and lymphocytes residing in the cap.

Dr. Virmani's contribution to the world's understanding of atherosclerosis is far-reaching. Prevention of late stent thrombosis remains a therapeutic challenge today.

Highlights from the CCS Guidelines and Position Statements

Tuesday afternoon has been set aside to highlight new CCS guidelines and position statements ranging from investigation of syncope to smoking cessation, cardiac rehabilitation and the use of the GRADE system in guideline development.

Investigation of syncope: Dr. Robert Sheldon, Professor of Medicine, University of Calgary, will initiate proceedings with highlights from the CCSV's newly-minted position paper on standardized approaches to the investigation of syncope. As he and colleagues note, the writing panel initially narrowed the literature down to some 85 articles. They then carefully assessed and graded the evidence upon which the paper was based. The Grading of Recommendations Assessment, Development and Evaluation (GRADE) framework, a structured method, was used to weigh the quality of evidence, as was similarly a structured method used to describe the strength of the recommendation or observation. Among the key areas to be discussed during the session will be major risk factors requiring urgent cardiac assessment; general concepts on assessing syncope; standardized syncope assessment and the weight of evidence supporting different approaches; and the identification of major gaps in our understanding of syncope. As the position paper authors note, assessment of syncope is often difficult because diagnostic clues are usually inferential and efforts to identify underlying etiologies may require a large number of modalities and target several organs. "This consumes substantial resources and prolongs patient stay," they write, "and the high proportion of patients who have benign causes of syncope negatively impacts this approach." These difficulties may be improved by the introduction of standardized approaches such as guidelines and checklists, and efforts to introduce a structured approach in syncope assessment—a number of which have already been introduced in the acute care setting—may help streamline appropriate delivery of care.

Refractory cardiac rehabilitation: Sherry Grace, PhD, School of Kinesiology, York University, Toronto, will discuss the CCS position on referrals to cardiac rehabilitation (CR). According to clinical consensus, the CCS recommends a 30-day wait time from hospitalization for cardiac disease to the start of the CR program. Currently, data suggest that the current wait time is about 40 days, although this varies widely by province. "Wait times are short when one is referred," Dr. Grace cautioned, "so access is one of the big issues for us." Indeed, only about 20 to 30% of patients who would benefit from CR actually attend a program. This is unfortunate, as very real benefits accrue from CR, as Martin et al. make clear. In a study presented here (abstract #163), Martin followed a retrospective cohort involving 5901 patients referred for CR in Calgary between July 1996 and February 2009. Of the 5901 patients, 2900 attended CR. Results showed that CR attendance was associated with a decreased risk of emergency room and hospitalization at three years, at an adjusted HR of 0.89 and 0.78, respectively. It was also associated with a lower risk of death (adjusted HR 0.59).

Most dramatically, CR reduced mortality risk by 60% (HR 0.40) in women compared with men (HR 0.64) as well as in the elderly, where it was associated with a 50% reduction in mortality (HR 0.50) compared to the non-elderly (HR 0.62). Fortunately, some CR programs are now offering an early education day for potential candidates where patients come in one week after being discharged from hospital. During a group session, pharmacists, nurses, dietitians and other health care professionals address patients' concerns and start them on a basic walking program before they begin CR formally. Shanmugasugaram et al. (abstract #474) also suggest that based on their own study, referral to structured and monitored home-based CR programs might enable patients to overcome many traditional barriers to CR attendance as they are more flexible and minimize some of these barriers.

Smoking cessation: Created in collaboration with smoking cessation pioneer Dr. Andrew Pipe, Dr. Mark Eisenberg, principal investigator of the Centre for Clinical Epidemiology and Community Studies and Professor of Medicine, McGill University, will discuss the contents of what is essentially the first position statement on smoking cessation strategies for Canadians. Currently, many cardiologists do not feel comfortable counselling patients about non-pharmacological or pharmacological approaches to smoking cessation and therefore leave the task of addressing smoking cessation to the primary care physician. The public in turn often feels that smoking is no longer a public health issue; consequently, many smokers do not ask for help. But as Dr. Eisenberg points out, close to 20% of the adult population still smokes, and therefore a tremendous public health issue that causes significant morbidity and mortality; getting patients to stop smoking could still have a major impact on smoking-related morbidity and mortality. As for pharmaceutical aids, it is still not clear whether one smoking cessation aid is more effective than another. In one study presented here by Reid et al. (abstract #164), 50 smokers hospitalized for coronary heart disease were assigned to varenicline or to transdermal nicotine replacement therapy for 12 weeks. At the end of 12 weeks, carbon monoxide-confirmed seven-day abstinence rates were 45% in the varenicline group compared with 31.6% in the nicotine replacement group, a potentially clinically important difference in cessation rates, as the authors concluded. The idea behind the position paper is simply to educate cardiologists about how to manage patients who are smokers; what types of smoking cessation therapies exist; what these therapies offer and how effective they are; and potential contraindications to specific types of smoking cessation therapies.

Using the GRADE scale in guideline development: Michael McGillion, PhD, Assistant Professor, Faculty of Nursing, University of Toronto, will discuss why the CCS now requires all clinical practice guidelines be developed using the GRADE system. As he notes, "GRADE is a streamlined system offering transparent direction for guideline developers on how to move from evidence evaluation to practice recommendations." For example, the Joint Canadian CCS-Canadian Pain Society (CPS) Guidelines for the Management of Refractory Angina were developed using the new CCS GRADE guidelines in the form of a position paper. Dr. McGillion will illustrate how the CCS-CPs guidelines explain practical implementation of the GRADE system, giving attention to the formulation of clear clinical questions; assessing the importance of clinical outcomes; and judging the quality of available evidence in context. GRADE principles also teach those involved in guideline development how to manage the common reality of inconsistent and imprecise results when faced with making treatment recommendations. His talk will be of key interest to future CCS guideline developers.

The CCS Guidelines and Position Statements will be presented Tuesday, October 26, 14:00-15:30 (Palais des congrès, Rm. 524AB).

The Women in Cardiac Sciences luncheon is being held Monday, October 25, 12:30-14:00 (Fortifications Ballroom, Le Westin Montréal).
Drug-eluting stents: Feixia et al. (abstract #396) found that implantation of drug-eluting stents (DES) for DES restenosis is feasible and safe but that treatment of DES restenosis with a different DES led to significantly lower repeat revascularization rates. For the study, 115 patients (131 lesions) initially treated with a sirolimus-, paclitaxel-, everolimus- or zotarolimus-eluting stent were retreated with the same DES in 39 lesions or a different DES in 92 lesions. At six months, target lesion revascularization (TLR) had occurred in 21.2% of lesions treated with the same DES vs. only 1.2% of those treated with a different DES. TLR rates remained lower in the latter group at 12 months as well.

Global CV risk management (PARADIGM) study: The Primary Care Audit of Global Risk Management (PARADIGM) prospectively evaluated the methods and accuracy of CV risk stratification—the foundation for optimal clinical management in CV care—among primary care physicians in Canada. As Gupta et al. found (abstract #261), the risk categories as judged by physicians were compared with centrally-determined risk assessment. Results showed that there was only fair agreement between physician and central risk assessment overall, and moderate agreement for physicians reporting routine use of the Framingham Risk Score. Indeed, physicians only correctly identified one-third of high-risk individuals and one-half of intermediate-risk subjects, suggesting better risk assessment tools are warranted.

Carcinogenic effects of ionizing radiation: Exposure to low-dose ionizing radiation (LDIR) has been associated with a linear risk of cancer in atomic bomb survivors and nuclear workers, prompting Afilalò et al. (abstract #253) to assess the risk of exposing patients with acute myocardial infarction to LDIR from diagnostic and therapeutic cardiac imaging procedures. The primary end point was the incidence of cancer. Over one decade, more than 82,000 patients were exposed to LDIR from some form of cardiac procedure at a cumulative exposure rate of 4.0 mSv/patient-year. Over 12,000 incident cancers were observed. For every 10 mSv of LDIR, there was a 1.5% increase in the occurrence of advanced cancer incidence over a median of 4.6 years, suggesting there is a need for judicious use of cardiac imaging procedures; alternatively, clinicians should favour imaging modalities without LDIR when clinically appropriate.

PCI in octogenarians: Data from a prospectively collected STEMI database were used to examine outcomes and complications in patients 80 years of age and older who were taken directly to the catheterization laboratory with the intent of undergoing primary PCI for ST-elevation MI. A total of 202 patients (mean age 83.9 years) were included in the analysis. PCI was attempted in 116 patients from 2002. As reported by Traboulsi et al. (abstract #682), results showed that in-hospital mortality was 13.3%; when patients presenting with shock were excluded, in-hospital mortality was 6.5% (mortality for the shock subgroup was 82%). At 30 days follow-up, six additional deaths occurred, resulting in a 30-day mortality rate of 16.3%. Thus primary PCI in octogenarians has a high procedural success rate (94%) and a lower-than-expected mortality rate. Déry et al. (abstract #687) reported that the use of the radial artery as the preferential vascular access site in octogenarians again undergoing PCI had lower rates of in-hospital complications and improved one-year survival rates compared with patients who underwent PCI using femoral arterial vascular access site. Findings need to be confirmed by a randomized trial.

Combination of SSRI/antiplatelet therapy increases major bleeding risk: Using data from the Quebec Health Services Administrative Databases, Labos et al. (abstract #323) followed over 27,000 patients discharged on antiplatelet therapy following hospitalization for an AMI between 1998 and 2007. Some 14,000 received ASA at the index date (date of discharge), approximately 2500 received clopidogrel and about 9500 received both. Some 406 patients on ASA also received a selective serotonin reuptake inhibitor (SSRI) and 240 on the antiplatelet combination also received an SSRI, as did 45 on the antiplatelet combination also received an SSRI, as did 45 on clopidogrel alone. Adjusted major bleeding rates were higher for patients receiving an SSRI plus ASA than clopidogrel (HR 2.1) and for those receiving an SSRI and clopidogrel (HR 1.91). The risk of major bleeding for those receiving both ASA and clopidogrel was comparatively low at 1.54 and bleeding risks for clopidogrel alone were similar to that of ASA alone at 1.1.
Changing Practice Standards for Starting Antiplatelet Therapy in ACS Patients

Montréal - Multinational trials in patients admitted for an acute coronary syndrome (ACS) have demonstrated that replacing clopidogrel with an antiplatelet agent that offers faster, more consistent and more potent inhibition of platelet activity produces greater reductions in ischemic events. Of the two agents demonstrating an advantage in published trials in an ACS population, the one showing the greatest relative difference achieved a 19% reduction (P<0.001) in a composite end point of death from cardiovascular causes, nonfatal myocardial infarction or non-fatal bleeding. The increase in major bleeding was more than compensated by the reduction in ischemic events, and the advantage increased after eliminating patient groups, such as those older than age 75, who did not achieve a relative risk reduction. Substantial changes in the standards for ACS therapy are anticipated on the basis of these data, which will be translated into practical terms during a breakfast symposium on Tuesday morning.

Montréal – Des essais multinationaux réalisés chez des patients hospitalisés pour un syndrome coronarien aigu (SCA) ont objectivé une réduction plus marquée des événements ischémiques lorsque le clopidogrel était remplacé par un antiplaquettaire dont l’action inhibitrice était plus rapide, plus constante et plus puissante. Le plus efficace des deux agents qui se sont révélés supérieurs chez les victimes d’un SCA dans les essais publiés a été associé à une diminution de 19 % (p<0.001) du risque relatif de survenue de l’un des événements regroupés dans le paramètre mixte (décès d’origine cardiovasculaire, infarctus du myocarde non mortel ou hémorragie non mortelle). L’augmentation des hémorragies majeures a été amplement compensée par la diminution des événements ischémiques, et l’avantage à cet égard était encore plus marqué lorsqu’on éliminait certains sous-groupes de patients, par exemple les plus de 75 ans, pour lesquels il n’y avait aucune réduction du risque relatif. On peut s’attendre à des changements substantiels dans le traitement de référence du SCA à la lumière de ces données, et la portée clinique de ces changements fera l’objet d’un symposium-déjeuner mardi matin.

By Ted Bosworth

The combination of clopidogrel and ASA has been widely employed as a first-line therapy in patients diagnosed with an acute coronary syndrome (ACS) and receiving urgent treatment. However, this standard is expected to change on the basis of data demonstrating that greater antiplatelet effect generates greater protection from ischemic events. In a symposium scheduled for Tuesday morning, prominent clinical researchers from Canada, the US and France will provide guidance about how these new data should be applied to routine patient care to improve outcomes.

One of the most important points likely to be stressed at the breakfast symposium is that patients with ACS are not optimally protected from ischemic events on the conventional regimen of clopidogrel plus ASA. In the key multinational study comparing prasugrel to clopidogrel, both administered with ASA, the 19% (P<0.001) relative reduction for the composite end point of ischemic events achieved with prasugrel relative to clopidogrel was accompanied by individual reductions of comparable magnitude in myocardial infarction (MI), urgent target-vessel rethrombosis and stent thrombosis. The study, called TRITON-TIMI 38 (Trial to assess improvement In Therapeutic Outcomes by optimizing platelet Inhibition with prasugrel - Thrombolysis In Myocardial Infarction 38), was conducted in 13,608 ACS patients scheduled for a percutaneous coronary intervention (PCI) (Wiviott et al. N Engl J Med 2007;357:2001-15).

A similar study conducted with ticagrelor, which, like both clopidogrel and prasugrel, blocks platelet activation by inhibiting the P2Y12 receptor, also demonstrated a relative risk reduction in a composite end point of ischemic events in an ACS population. In this study, called PLATO (PLatelet inhibition And PaTient Outcomes), the reduction in the composite end point relative to clopidogrel at 16% (P<0.001) was slightly less on ticagrelor than that observed with prasugrel in TRITON-TIMI 38. However, there were several important differences in the types of patients recruited and treated in these studies that make this cross-study comparison particularly inappropriate. Yet both studies confirm that the greater antiplatelet effect of the newer P2Y12 receptor inhibitors, observed both experimentally and clinically, produces greater risk reductions when compared to clopidogrel.

During the breakfast symposium on Tuesday morning, Dr. Erick Schampaert, Head, Division of Cardiology, Hôpital du Sacré-Cœur, Montréal, and Prof. Jean-Philippe Collet, Professor of Cardiology, Hôpital Pitié-Salpêtrière, Paris, France, will discuss why the newer agents are demonstrating greater protection than clopidogrel, which is now understood to be handicapped by poor response in up to 30% of patients with genetic polymorphisms that adversely affect hepatic metabolism of this drug. The problem with inter-individual differences in clopidogrel metabolism, which is not shared by the newer agents, provides one explanation for the greater effect of the newer agents. However, there are also important pharmacodynamics characteristics, including the greater peak antiplatelet effect of prasugrel, that are also likely to contribute to a relative efficacy. The advantage becomes particularly pronounced in those populations at greatest imminent risk of thrombosis.

Continued
For example, prasugrel relative to clopidogrel is substantially more potent, with some experimental studies suggesting that this potency may be up to 1 log greater. Perhaps more importantly, prasugrel in a loading dose of 60 mg reaches peak antiplatelet effect in 60 to 90 minutes vs. 6 hours for a 300-mg loading dose of clopidogrel. In unstable ACS patients receiving urgent treatment, this rapid effect may often be critical.

There is a narrow window between reduced risk of thrombotic events and increased risk of major bleeding, as observed in many clinical studies, but TRITON-TIMI 38 is among those that have confirmed that very high-risk patients are not receiving enough protection from thrombotic events on the combination of clopidogrel/ASA. Although major bleeding rates were increased on prasugrel relative to clopidogrel, these were concentrated in several risk groups, particularly individuals weighing less than 60 kg, those older than age 75 and those with a history of cerebrovascular disease. While it is prudent to use clopidogrel or lower doses of prasugrel in these populations, TRITON-TIMI 38 demonstrated that relative opportunity for benefit far exceeded the relative risk for harm even before these patients were screened for analysis.

More potent platelet inhibition is a critical step forward in reducing event rates in high-risk ACS patients, particularly those with ST-elevation MI (STEMI) or any patient who proceeds to placement of an intracoronary stent. Dr. Dominick J. Angiolillo, Director, Center for Thrombosis Research, University of Florida College of Medicine at Jacksonville, will evaluate exactly where more potent antiplatelet inhibition with prasugrel and other antithrombotic therapies fits with current definitions of optimal ACS care. Dr. Angiolillo is expected to acknowledge that use of antiplatelet therapies will be more individualized in a new era when clopidogrel and ASA are no longer the uniformly applied standard; however, he is also expected to explain how prasugrel can be employed to provide maximal protection against ischemic events.

The individualization of antiplatelet therapy in ACS patients requires a better understanding of both the relative advantages and risks of different strategies in relationship to specific patient populations, such as STEMI vs. non-STEMI patients or patients with a known bleeding risk. However, relatively simple principles can be applied, and these will become evident in a case discussion at the end of the breakfast symposium that will include all of the faculty and Dr. Catherine M. Kells, Head, Division of Cardiology, Capital Health, Halifax, Nova Scotia. The chair of the Tuesday morning breakfast symposium, Dr. Robert Welsh, Director, Adult Cardiac Catheterization, University of Alberta, Edmonton, will also participate. The goal is to translate emerging data on new antiplatelet agents into specific clinical strategies.

Of the specific types of ACS patients, particular focus at the breakfast symposium will be placed on STEMI patients, who are among the highest risk and the most likely to receive a PCI with or without an intracoronary stent. Due to this risk, this patient population can derive the greatest relative benefit from more potent antiplatelet agents such as prasugrel. While the rapid antiplatelet activity might be expected to provide a relative advantage during initial treatment, greater potency may also be meaningful in maintenance regimens among stented ACS patients. These individuals remain at very high risk of thrombosis over extended periods of recovery. Some discussion regarding the controversy about how long patients should remain on optimally potent antiplatelet regimens is expected during the Tuesday symposium.

Although the recent data have provided the basis for establishing new standards for antiplatelet therapy in ACS patients, they have also increased focus on risk stratifications among individuals who are candidates for these agents. Due to the importance of balancing the protection from antithrombotic effects against the risk of major bleedings, the symposium will have an important role for delineating how patients should be differentiated when attempting to offer a strategy with the greatest possible benefit:risk ratio.

Summary

Data from large, multinational randomized trials have demonstrated that combination clopidogrel/ASA does not provide optimal protection from ischemic events in ACS patients. As a result, ACS treatment standards are evolving with the anticipation of greater individualization of antiplatelet treatments that ensures more effective regimens are employed in those patients at greatest risk, particularly patients undergoing PCI with a high likelihood of receiving an intracoronary stent. In such patients, the benefit:risk ratio of prasugrel and other newer, more potent antiplatelet agents has the potential to maximize the reduction of life-threatening ischemic events.

Please plan to attend:

TUESDAY, October 26

“The Evolution of ACS: A Town Hall Discussion Focusing on Practical Considerations in Antiplatelet Therapy.”
7:00-9:00, Room 517D, Palais des congrès.

This symposium is accredited and co-developed as an Accredited Group Learning Activity under Section 1 of the framework of Continuing Professional Development options as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada (RCPSC).

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Note: Unless specifically stated otherwise, the opinions and information presented in these reports are those of individuals and do not represent the opinions of the Canadian Cardiovascular Society.
Update on Hypertension Canada: Fast-forward Prevention, Treatment and Control of High Blood Pressure

By Pam Harrison

Vancouver - Three separate groups dedicated to the prevention, treatment and control of hypertension in Canada have now merged into a single organization, Hypertension Canada. Health care professionals are invited to visit their Web site and avail themselves of educational materials for their own use and patient education. There is also a patient-friendly site where individuals may access visual and written material to learn more about blood pressure (BP). In the meantime, a policy committee has been formed within Hypertension Canada to drive the development of healthier public policies as they pertain to hypertension. The Sodium Working Group’s “Sodium Reduction Strategy for Canada,” recently endorsed by provincial health ministers, is one such policy initiative, calling for significant reductions in dietary sodium intake by the year 2016. Despite certain calls for less aggressive treatment of high BP in diabetes, Hypertension Canada still recommends targets of <130/80 mm Hg in patients with type 2 diabetes.

The need to prevent, treat and control hypertension in Canada has been given a large push forward with the merging of 3 separate groups into Hypertension Canada. Their main purpose is to interact more effectively with all stakeholders involved in the health of the nation.

The Canadian Hypertension Education Program (CHEP), Blood Pressure Canada and the Canadian Hypertension Society have now amalgamated in their attempt to make prevention and control of high blood pressure (BP) more efficient and effective across the country. “The organization is going to try to increase and improve awareness of hypertension among both health care professionals and their patients,” Dr. Norm Campbell, Professor of Medicine, Libin Cardiovascular Institute of Alberta, University of Calgary, told INFO-Cardio.

Indeed, all health care professionals are invited to sign up at htnupdate.ca where they will be able to download educational materials for themselves and their patients. “We also have electronic notification system regarding updates or new resources for them or their patients as they become available,” he added. The organization also has set up a separate site for patients—mybpsite.ca—where patient-related material in both video and written format is available for individuals seeking more information about BP.

Hypertension Canada is now also holding “train-the-trainer” sessions, Dr. Campbell noted. These sessions last about 3 to 4 hours, during which the trainer trains individuals in the community to be more aware of and have more ready access to resources in the area. The same format can also be used to educate patients about the resources available to them in their own community as well as health care professionals, he added.

“The other major initiative of Hypertension Canada is a public policy committee,” Dr. Campbell continued. This committee was established to work with governments. The main goals are the development of healthier public policies for the prevention and control of hypertension; an improvement in health services for the better management of hypertension; and an increase in a community’s capacity to prevent and control hypertension. “Of course, health is a provincial mandate,” as Dr. Campbell noted. Here, the same committee will attempt to help provinces establish policies to detect, treat and control hypertension, among which would include policies dictating how much salt is put into food and how commercially available foods are labelled.

“These types of policy changes require both the public and health care professionals to get behind them and
hence, the theme for our education program this year is a ‘call to action’ for Canadians and health care professionals alike to push governments to become more active in the development of policies that impact on the health of Canadians,” Dr. Campbell stated.

Sodium Working Group

Investigators reported that as of July 2010, the Sodium Working Group has developed a “Sodium Reduction Strategy for Canada” which calls on multi-levels of government, industry and non-government organizations to take action on reducing the sodium content in our food. As the Sodium Working Group write in their document, the mean intake of sodium among Canadians is now about 3400 mg/day, at least 75% of it through commercially available foods. The majority of adults and children consume sodium in amounts that exceed upper recommended limits.

A decrease in the average sodium intake of approximately 1800 mg/day would have an enormous public health impact, preventing an estimated 23,500 cardiovascular disease (CVD) events a year and a direct savings in health care. A recent US study cited by the Sodium Working Group also showed that even a modest 400 mg reduction in sodium a day would, over a 10-year period, decrease the number of coronary artery disease (CAD) cases by 20,000 to 40,000; stroke by 11,000 to 23,000; myocardial infarction by 18,000 to 35,000 and all-cause mortality by 15,000 to 32,000 a year. In fact, as the Working Group point out, a 1200-mg reduction in daily salt intake would have about the same effect on CAD rates as a 50% reduction in tobacco use and it would be more cost-effective than using medication to treat hypertension.

Hence, one of the key recommendations from the Sodium Working Group is to establish an interim sodium intake goal of 2300 mg of sodium/day by 2016. Their ultimate goal is to get over 95% of Canadian citizens to a mean intake below tolerable upper intake levels which is age-dependent. “In September, the provincial ministers of health endorsed the policy and indicated they were very interested in lowering dietary sodium,” Dr. Campbell announced, “so we have a strategy; different levels of government are engaged, and we have to implement it.”

Clinical Trials – ACCORD

Also presented during the scientific sessions and of interest to the new organization is the ACCORD (Action to Control Cardiovascular Risk in Diabetes) trial published this year (N Engl J Med 2010;362:1575-85). ACCORD randomized over 10,000 high-risk patients with type 2 diabetes to either intensive or standard glycemic control; in addition, 4733 participants were assigned to either intensive or standard BP control. Target systolic BP in the intensive group was <120 mm Hg, while target systolic BP in the standard group was <140 mm Hg.

After one year, the mean BP in the intensive therapy group was 119/64 mm Hg vs. 134/71 mm Hg in the standard therapy group. The primary composite outcome—time to first occurrence of a major CV event—occurred at a rate of 1.87% per year in the intensive-therapy group compared with 2.09% in the standard-therapy group, with no significant between-group differences. Nor was any risk reduction in stroke observed in favour of the intensive-therapy group. However, having scrutinized the design and findings of ACCORD, Hypertension Canada experts felt that a call for less aggressive BP targets for patients with diabetes could not be condoned for a number of reasons; consequently, they still recommend patients with diabetes be treated to targets of <130/80 mm Hg.

Dr. Campbell noted that results from the recent Canadian Health Measures survey showed that about 1 in 5 adult Canadians has hypertension and that has not really changed over time. On the other hand, Canada can now boast the highest rate of awareness, treatment and control of hypertension in the world, with approximately 80% of the 4.6 million Canadian adults with hypertension being treated with antihypertensive drugs—BP being well controlled in two-thirds of them—a good-news story, Dr. Campbell suggested, and largely the result of better education of health care professionals and a greater awareness of hypertension among the public.