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Research Announcements

Submitting abstracts to the CSATVB at joint meetings with the CCS :

The CSATVB encourages its members to submit their abstracts under its banner. Subsequently applicants should indicate this by checking the appropriate box. This way the abstract will be judged by CSATVB assigned referees. In 2004, for the Calgary Meeting, the CSATVB received 11 abstracts eligible for the Young Investigator Awards and 10 regular submissions. All were all of the highest quality. We elected to assign 6 of those to the poster session and supplemented the remaining 15 with an additional 9 from the CCS submissions to hold four 90-minute

oral sessions. Pfizer Canada provided our society with the financial support to sponsor these presenting students.

Student Travel Subsidy and CSATVB Trainee Awards

Students applying for travel funds and the CSATVB Trainee awards should be associate (Trainee) CSATVB members or applicants for the associate membership before the indicated deadline. The deadlines are shown on the enclosed application forms. Membership applications should be submitted to Dr. Marie-Claude Vohl. Please also note that it is not sufficient for the student's supervisor to be a member in good standing for them to qualify. We encourage the students working in laboratories of CSATVB members to join the Society and benefit from these opportunities. Moreover, they should submit their applications and abstracts on the CSATVB

forms and should also benefit from the awards given by the Society. Application forms for "New Investigator Grants in Aid" and "Trainee Awards" are also attached and instructions are posted on the CSATVB website.

All applications should be sent to:

Dr. Bassam A. Nassar
Chair, Education Committee
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To include material in the CSATVB
NEWSLETTER, please contact:
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CSATVB NEWSLETTER June 2005

- President's Report -

Since coronary artery disease is the leading cause of mortality in the western world, it was indeed appropriate to bring Canadian physicians and scientists who work on atherosclerosis together in an academic scientific society. Over the past 20 years the Canadian Society of Atherosclerosis, Thrombosis and Vascular Biology (CSATVB; originally the Canadian Athero-sclerosis Society) has played an active and important role in promoting and presenting high quality research in atherosclerosis, thrombosis, and vascular biology to Canadian colleagues in cardiovascular medicine. It is indeed within the context of the international research thrust that Canadian investigators have carried out their innovative research programs.

Acute coronary syndromes (ACS) are characterized clinically into three groups, patients with unstable angina, those with non-ST elevation myocardial infarction (non-STEMI) and those with ST elevation myocardial infarction (STEMI). The presence of atherothrombotic coronary artery occlusion due to plaque rupture and super-imposed thrombosis with or without distal

embolization is the common pathophysiology of ACS.

The lesions of atherosclerosis were identified by anatomical pathologists well before establishing a causal association between the histopathology observations found in arteries at autopsy and the clinical syndromes of coronary artery disease. Atherosclerosis has been shown to be present as far back as ancient Egypt. The term arteriosclerosis was used in a 1829 pathology monograph. Carl Rokitsky promoted a thrombogenic theory of atherosclerosis in 1852. Rudolf Virchow, in 1858, identified the presence of intimal deposits in arteries. He focused his thinking on cells, connective tissue, and ultimately on vascular degeneration. By the first decade of the 20th century, both Alexander Ignatovski and Nikolai Anitschkov carried out experiments that showed that egg yolk and pure cholesterol caused atherosclerosis in experimental animals. The hypercholesterolemic model of atherogenesis became a well studied model in many species, and has now been successfully extended to transgenic murine models, including mouse models with features of advanced human atherosclerotic plaques and elements of plaque instability.

Alongside these lipid studies, the role of thrombosis in atherogenesis was being well studied improving our understanding of platelet structure and function, and of coagulation and fibrinolytic processes.

Elegant, detailed morphological and clinical pathologic studies in the past 20-30 years by anatomic pathologists provided very important new knowledge that helped to focus and design studies on pathogenesis. The field of atherogenesis began to utilize innovative biochemical, cellular and molecular investigations on human biologic material, experimental animal models, and in vitro systems to direct attention on cell function, especially that of monocyte/macrophages, endothelial and smooth muscle cells. A major advance has been the ability to culture pure vascular endothelial cells and smooth muscle cells, which occurred in the late 70's and early 80's. The technologies that are now being utilized included genomics, proteomics, cell and tissue imaging, clinical chemistry, and interdisciplinary approaches involving integrative biology, bioengineering, computational biology, regenerative medicine, biomaterials, and clinical imaging. Today, the intense study

of endothelial and smooth muscle cell function, hemodynamic shear stress, lipid deposition, macrophage function and inflammation, immune activity, neovascularization, thrombosis, matrix remodeling and fibrous cap rupture has been made possible. Investigations on the pathogenesis of atherosclerosis also led to a better understanding of the clinical conditions of ACS, especially in relation to the structure and function of the fibroinflammatory lipid plaque and its complications. Studies are now being directed at the pathogenesis, diagnosis, risk stratification and treatment of ACS using well conceived clinical practice guidelines, especially as they relate to thrombosis, plaque rupture, and plaque growth. In addition, the contribution of genetic risk factors to the development of ACS is also being very actively studied. Pro-inflammatory gene polymorphisms have now become an important area of study to understand the development of atheromatous plaque vulnerability. Two major outstanding questions will benefit from ongoing state-of-the-art research studies. The questions are, why is the thrombotic response in the lumen not necessarily associated with the extent of plaque rupture in individual patients and why is it that angiographically identified minor to moderate plaques do rupture. Answers to these issues will identify important biologic processes that may be targeted to prevent and/or treat ACS.

The role of adult stem cells for the maintenance and regeneration of endothelium is a new area of vascular research that will have important impact on the diagnosis, treatment, and prevention of ACS. The concept is that endothelial precursor cells and/or stem cells, derived, at least in part from the bone marrow, are increased in

number following vascular injury. They are then released into the peripheral circulation, to somehow target injured vessel walls, attach to the denuded surface and differentiate to reestablish endothelial integrity. Numerous issues remain to be understood. The nature of the adult stem cells and/or the precursor cells and how they differentiate needs to be characterized. The factors that trigger activation and proliferation of these cells require identification. The molecular mechanisms for regulation of cell function need to be understood, and the mechanisms of targeting injured vasculature, adhering to the sites and integrating into the mature endothelium need to be investigated.

The CSATVB was hence established in 1984 by a group of Canadian clinicians and basic scientists committed to improving atherosclerosis and cardiovascular research, education and patient care. Presently, the CSATVB consists of more than 200 members across Canada, including physicians, researchers, corporate members, students, trainees and technicians. Our society has indeed been in existence over a period of time that has seen remarkable advances in our understanding of cardiovascular disease, especially atherosclerosis. We continue to promote excellent science and feature the work of graduate students, medical students, postdoctoral trainees, research associates, technologists and young and established investigators at our annual meeting and at other meetings that we support throughout the year. Join us at our annual meeting at the Canadian Cardiovascular Congress in Montreal, Oct 22-26, 2005. Attend and participate in our symposia, oral sessions, poster sessions and meet friends and colleagues in the wonderful setting of Montreal.

We look forward to seeing you in Montreal as we celebrate our 20th anniversary.

**Avrum I. Gotlieb, M.D., C.M.
President, CSATVB**

Meetings

Our primary scientific meeting continues to be in conjunction with the **Canadian Cardiovascular Congress** and this year it will be in beautiful **Montreal, Quebec**. Again this year, we continue to replace the Workshop by a third Symposium, now known as the President's Symposium and is in fact organized and chaired by the President, Dr. Avrum I. Gotlieb. Additionally, and to facilitate attendance, Symposium I has been moved to the pre-noon period. Importantly, and for the second year, our Society continues to receive support from **Pfizer Canada** for two of its symposia. Our preliminary programme is now as follows:

Preliminary Programme of the CSATVB 2005 Meeting in Montreal, Quebec

Sunday, October 23, 2005

9:00-1:00 Meeting of the Executive & Council
2:00-5:00 Poster Presentations

Monday, October 24, 2005

8:30-10:00 Oral Session I
10:30-12:00 Symposium I
Chair: Dr. Alexandra R. Lucas
The Intrigue of Vascular Innate Immunity
Speakers: Erik Biessen, Phillip Murphy, Murray Huff, Alexandra Lucas
1:30-3:00 Symposium II
Chair: Dr. Philip Connelly
Inflammation and Atherosclerosis
Speakers: Jonathan Smith, Stewart Whitman, Gwendalyn Randolph
4:00-6:00 Oral Session II

Tuesday, October 25, 2005

8:00-10:00 Oral Session III
10:30-12:00 Symposium III
President's Symposium
Chair: Dr. Avrum I. Gotlieb
Molecular Mechanisms in Vascular Disease
Speakers: Martin Sirois, Scott Heximer, Philip Marsden
1:30-3:00 Oral Session IV
4:00-4:30 Annual General Meeting
4:30-5:30 Reception and Awards

We continue to collaborate with the **Canadian Lipoprotein Conference**

Important Notices to Members

New Investigator Grant-in-Aid Supported by Pfizer Canada

The CSATVB will provide for 2005 **one New Investigator Grant-in-Aid** of \$10,000. The deadline for receipt of applications which are available on our website is September 1, 2005. The proposals will be reviewed, and notification of the decision will be rendered during the 2005 Annual Meeting in Montréal.

In 2004, the CSATVB received **six** applications from faculty members for the grant. These were reviewed by three independent referees and the grant was awarded to **Dr. Stewart Whitman** from the Department of Pathology and Laboratory Medicine, Faculty of Medicine, University of Ottawa for the proposal entitled: ***The role of cellular inhibitor of apoptosis-2 (c-IAP2) in the development and progression of Atherosclerosis***

Dr. Whitman will be presenting his work using this funding at our 2006 meeting.



Student Awards

Three students received awards for best presentation at the CCC CSATVB Meeting :

The Best Poster Award

Karine Blouin: Centre de Recherche sur les Maladies Lipidiques, CHUQ and Molecular Endocrinology and Oncology, Laval University, Québec. Supervisors, Drs. Marie-Claude Vohl and Andre Tchernof:
Effect of a low-fat diet on plasma sex hormones-binding globulin (SHBG) in overweight women. K Blouin, J Robitaille, B Fontaine-Bisson, C. Belanger, P Couture, MC Vohl, A Tchernof

The Best Podium Presentation

Guosong Qiu: Healthy Heart Program, St-Paul's Hospital, Department of Pathology, University of British Columbia, BC. Supervisor, Dr. John Hill:

Suppression of lipoprotein lipase gene expression in human macrophages. G Qiu, HMLi, JS Hill

Chantal Belanger: Centre de Recherche sur les Maladies Lipidiques, CHUQ, Laval University, Québec. Supervisors, Dr. Andre Tchernof:

Androgens and LDL particle size in men. C Belanger, Y Bosse, B