CV Research Victoria

Victoria Heart Institute FOUNDATION

June 2006

Featured Trials:

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Research Director Message

Dr. W. Peter Klinke
Research Director VHIF

Welcome to the first edition of the Victoria Heart Institute Foundation newsletter.

VHIF, as a non-profit society, has been engaged in clinical research into cardiovascular diseases for many years now and has built up a strong reputation both nationally and internationally.

The importance of research in cardiovascular disease cannot be over-emphasized. Participating in good clinical research goes hand-in-hand with good clinical practice.

Our mission is to improve the cardiovascular health of patients on Vancouver Island by involvement in exciting and novel research trials. Of the many trials we are currently engaged in, five are highlighted in this issue.

We hope you enjoy reading this newsletter and we welcome your feedback and suggestions.

Featured Trials

The Northern Trial

Purpose

The standard treatment for patients with coronary artery disease is generally either coronary artery bypass surgery (CABG) or coronary angioplasty (PCI). However, for some of these patients the expected benefits are outweighed by the attendant risk and other treatments are recommended.

The Northern Trial is a gene therapy study designed to assess the efficacy and safety of direct cardiac injection of vascular endothelial growth factor (VEGF). VEGF is a protein released naturally by the body when there is inadequate blood supply to an organ or tissue. This protein causes the growth of new blood vessels from existing vessels. Treatment with VEGF may result in increased blood vessel growth into the heart, thereby improving cardiac function and relieving symptoms.

Study Snapshot	**Northern**
Patient Condition:	**Myocardial Ischemia**
Official Title:	Multicentre, Randomized, Double Blind, Placebo Controlled Trial of Myocardial Angiogenesis Using VEGF165, Intramyocardial Gene Delivery in Patients With Severe Angina
Study Type:	Interventional
Intervention:	Procedure: intramyocardial delivery of either VEGF165 or placebo
Study Phase:	Phase II
Study Design:	Treatment, Randomized, Double-Blind, Placebo Control, Parallel Assignment
Expected Enrollment:	120 patients
Victoria Enrollment:	23 patients
Principal Investigator:	J. David Hilton, M.D.
Co-Investigator:	W. Peter Klinke, M.D.
Co-Investigator:	Anthony Della Siega, M.D.
Co-Investigator:	Manjeet Mann, M.D.
Co-Investigator:	James W. Dutton, M.D.
Sub-Investigator:	Reginald E. Smith, Pharm D.
VHIF Coordinator	Noreen Lounsbury, BN
Sponsor:	St. Michael's Hospital (Toronto)
Study Progress:	Start: July 2002 — End: Dec 2006

"Yesterday's research is today's best practice... Today's research leads to tomorrow's breakthroughs"

Study Status

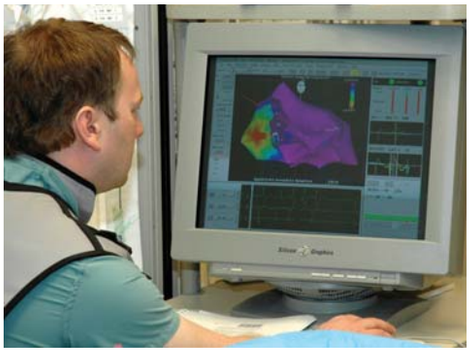
The Northern Trial is being conducted by researchers based at St. Michael's Hospital in Toronto. Victoria is one of seven centres participating in the Northern Trial since it began in June 2002.

How It Happens

Patients experiencing angina typically undergo an angiogram procedure in the Heart Catheterization Lab. Angiogram results are reviewed by a cardiologist and a cardiovascular surgeon, and should the patient be deemed unsuitable for CABG or PCI, the patient will be considered a possible candidate for the Northern Trial.

Following the patient consent process where the risks and benefits of participation in the Northern trial are discussed, the potential study patient is then put through a number of eligibility screening procedures including an echocardiogram. Claire Langley, Echo Sonographer, performs the diagnostic procedure in the Echocardiography Lab of the Royal Jubilee Hospital.

The study patient will then go to the Nuclear Medicine department for a MIBI scan. The study patient will also undergo extensive lab tests, x-ray exams, ophthalmology exams, and exercise treadmill testing, prior to randomization.



Picture 2:
Rob Gunn, *CV Tech, Royal Jubilee Hospital Heart Cath Lab operates NOGA Imaging Equipment*

Picture1:
Dr. Reg Smith

The study patient will then be scheduled for the direct cardiac injection of VEGF or placebo while in the Heart Cath Lab.

On the day of the procedure, patients arrive in the Cardiac Short Stay unit of RJH where they are prepared for the procedure and an overnight stay.

Study medication will have been prepared in a sterile environment in the hospital pharmacy by Dr. Reginald E. Smith [picture1], Clinical Specialist, Cardiac Services & Thrombosis Clinic, RJH, and a Hospital Pharmacy Technician.

A NOGA heart-mapping procedure is performed by a cardiologist and Rob Gunn, Cardiovascular Technician [picture2] to locate injection sites.

The study patient receives ten injections of VEGF or placebo into the left ventricle by the cardiologist [picture3]. After the procedure, study patients are followed closely for a six month period by research staff from VHIF. Study patients undergo diagnostic exams where cardiac function is measured (endpoints of the study).

Featured Trials (continued)

Northern Trial

Enrollment Tracking as at February 2006

	Site:	Patients Randomized:
1	Victoria Heart Institute Foundation	23
2	St. Michael's Hospital	20
3	University of Alberta	15
4	Montreal Heart Institute	13
5	Laval Hospital	7
6	Sunnybrook & Women's College HSC	1
7	Mount Sinai Hospital	0
		79

Study Challenges

There are two challenges that have contributed to making the Northern Trial a difficult study to complete. The first challenge has been the limited number of centres in Canada capable of performing the NOGA mapping procedure, which requires both cardiologists and CV technicians who have received special training, and a centre with the availability of special NOGA equipment

The second challenge has been the relatively small number of study sites (7) participating in the trial. This has resulted in an extended study duration while researchers enroll eligible patients.

Knowledge Gained

The Northern Trial builds upon an earlier gene therapy research trial called REVASC (randomized evaluation of VEGF angiogenesis in symptomatic coronary artery

Picture 3:
Mr. Bruce Walton , *Northern Trial study patient,* ***Dr. Anthony Della Siega, Dr. Peter Klinke***

Featured Trials (continued)

disease) conducted in Victoria by Dr. Jim Dutton, Cardiovascular Surgeon.

In the REVASC trial, intramyocardial injections of an adenoviral vector containing VEGF121 (growth factor) were administered directly to the epicardial surface of the heart following a thoracotomy (open heart procedure).

The REVASC trial yielded positive results for patients, and was the impetus for the Northern Trial. The method of delivery of the growth factor via percutaneous catheter as in the Northern Trial is less invasive than a thoracotomy.

The SNAPIST-III Trial

Study Snapshot	**Snapist-III**
Patient Condition:	**Coronary Re-stenosis**
Official Title:	A Phase II Safety Trial of Intracoronary Administration of Systemic Nanoparticle Paclitaxel (ABI-007) for the Prevention of In-Stent Restenosis
Study Type:	Interventional
Intervention:	Drug: ABI-007
Study Phase:	Phase II
Study Design:	Treatment, Non-Randomized, Open Label, Dose Comparison, Single Group Assignment, Safety/Efficacy Study
Expected Enrollment:	70 to 80-patients
Victoria Enrollment:	14-patients
Principal Investigator:	J. David Hilton, M.D.
Co-Investigator:	W. Peter Klinke, M.D.
Co-Investigator:	Richard R. Mildenberger, M.D.
Co-Investigator:	R. David Kinloch, M.D.
Co-Investigator:	Malcolm B. Williams, M.D.
Co-Investigator:	Eric B. Fretz, M.D.
Co-Investigator:	Anthony Della Siega, M.D.
VHIF Coordinator	Liza MacRae, BN, RN
Sponsor:	ABI
Study Progress:	Start: July 2005 — End: 2007

Purpose

Patients experiencing angina due to a narrowing of their coronary arteries are likely to be treated by percutaneous transluminal coronary angioplasty (PTCA) to increase the inside diameter of the coronary artery, and restore blood flow to heart tissues.

The cardiologist is also likely to place a stent (small, stainless steel tube) at the point in the artery where the narrowing occurred to hold the arterial walls open.

PTCA and an implanted stent are effective treatments, yet research has shown that the likelihood of the coronary artery narrowing again (re-stenosis) after PTCA and stent is about 15-25%. Available drug-coated stents (drug eluting stents - DES) reduce re-stenosis to rates consistently less than 10%, however, DES may not be as effective in more complex stenting situations such as side branches or bifurcation lesions and in small and tortuous vessels.

Reducing the rate of re-stenosis is the goal of the SNAPIST-III trial. The SNAPIST-III trial is designed to evaluate the effectiveness of an injection of nanoparticle paclitaxel (ABI-007) in reducing re-stenosis rates for patients who receive a bare metal stent.

Study Status

Enrollment in the SNAPIST-III trial is underway in Romania and Canada (Vancouver and Victoria). Fourteen study patients have been enrolled into SNAPIST-III in Victoria. There are sites under consideration in Europe, South America and the United States.

How It Happens in Victoria

Potential study patients are identified following a coronary angiogram. After consultation and consent, study patients undergo a cardiac intervention of PTCA and placement of a stent. An intravascular ultrasound (IVUS) procedure is performed to measure initial vessel diameter. The study drug is prepared in the pharmacy, and delivered via intra-coronary injection.

After discharge from the hospital, study patients are followed by VHIF research staff. Study patients are seen at one week and one month following the procedure. A second angiogram and IVUS procedure is performed at six months to again measure vessel diameter and evidence for re-stenosis. Study patients are seen at scheduled intervals in the VHIF clinic over the course of a twenty-four month period post-procedure.

Study Challenges

Study patients must be able to return for a non-routine second angiogram and IVUS procedure in order to determine the effectiveness of the study treatment.

Knowledge Gained

Numerous clinical trials and real-world experience have shown that drug-eluting stents successfully repress neoinitimal proliferation in the majority of percutaneous coronary interventions (PCI), yet questions remain regarding the effectiveness of DES in more complex situations. In addition, questions about the cost-effectiveness of DES limit its use in much of the world. There remains a good deal of interest in the development of a systemic therapy to prevent re-stenosis.

The MERLIN TIMI 36 Trial

Purpose

The MERLIN-TIMI 36 is a double-blind, randomized, placebo-controlled, parallel-group clinical trial designed to evaluate the efficacy and safety of ranolazine during acute and long-term treatment in patients with non-ST elevation acute coronary syndromes (ACS) treated with standard therapy.

MERLIN-TIMI 36 is a huge, multi-national trial involving study patients in over 600 hospitals in seventeen countries including

Canada, USA, Russia, Israel, Netherlands, Georgia, Italy, South Africa, UK, Spain, Austria, and Poland.

The study drug, ranolazine, is believed to improve the efficiency of oxygen use in cells that are not receiving enough oxygen, such as during unstable angina or a heart attack.

Study Status
Enrollment is expected to conclude in June of 2006.

How it Happens
While in the hospital study patients undergo a full physical examination and an electrocardiogram, and complete a quality of life questionnaire. Study patients will be fitted with a heart monitor, which they will wear for seven days (inside and outside of the hospital).

In addition to routinely prescribed medications to treat unstable angina or heart attack study patients will be assigned by chance (randomized) to receive either ranolazine or placebo.

Study drug (ranolazine or placebo) is first administered intravenously for 12 to 96 hours duration, thereafter study drug is administered in pill form taken two times daily for up to twenty-four months.

Study patients visit the VHIF clinic every four months where research staff review general health, medications, heart symptoms, hospitalizations, procedures or doctor visits. Eight weeks after the hospital visit, study patients will undergo an exercise tolerance test.

Study Snapshot	MERLIN-TIMI 36
Patient Condition:	Myocardial Ischemia
Official Title:	A Randomized, Double-Blind, Parallel-Group, Placebo-Controlled, Multinational, Clinical Trial to Evaluate the Efficacy and Safety of Ranolazine Vs Placebo in Patients With Non-ST Segment Elevation Acute Coronary Syndromes
Study Type:	Interventional
Intervention:	Drug: Ranolazine
Study Phase:	Phase III
Study Design:	Treatment, Randomized, Double-Blind, Placebo Control, Parallel Assignment, Safety/Efficacy Study
Expected Enrollment:	6,500 patients
Victoria Enrollment:	19-patients
Principal Investigator:	W. Peter Klinke, M.D.
Co-Investigator:	J. David Hilton, M.D.
Co-Investigator:	Manjeet Mann, M.D.
Co-Investigator:	Anthony Della Siega, M.D.
Co-Investigator:	Reginald E. Smith, Pharm. D.
VHIF Coordinator	Norma Sorensen, RN
Sponsor:	CV Therapeutics, Inc.
Study Progress:	Start: Oct 2004 — End: 2008

Knowledge Gained
The study drug, ranolazine, has been shown to increase exercise capacity in patients with chronic angina in the absence of clinically significant changes in heart rate and blood pressure.

Reduction of cardiac ischemia in sicker patients with ACS may improve outcomes and save lives.

MERLIN TIMI-36
Worldwide Recruitment - April, 2006

Country	Sites	Recruitment
Russia	15	728
USA	88	691
Netherlands	41	524
Poland	23	520
Israel	15	505
Georgia	7	453
Italy	33	368
Czech Republic	14	361
Canada (less Victoira & Nanaimo)	36	326
Victoria & Nanaimo		***19***
Germany	45	315
Other sites	148	1338
Total	**465**	**6148**

The Everest-II Trial

Purpose
Mitral valve regurgitation (MR) occurs when the two leaflets of the mitral valve do not close properly causing blood to leak backward with each heartbeat. The standard treatment for symptomatic MR is mitral valve surgery.

The purpose of the Everest-II study is to evaluate a new device and compare it to traditional open heart surgery to replace or repair the mitral valve. The device is called the Cardiovascular Valve Repair System (CVRS) consisting of a delivery catheter and an implantable clip (MitraClip™) to repair the mitral valve.

Study Status
Victoria is one of about 30-sites across North America participating in the Everest-II Trial. Enrollment in Victoria is set to begin in the summer of 2006. Anticipated enrollment from Victoria is ten patients.

Study Snapshot	EVEREST-II
Patient Condition:	Mitral Valve Regurgitation
Official Title:	A Study of the Evalve Cardiovascular Valve Repair System (CVRS) Endovascular Valve Edge-to-Edge Repair Study
Study Type:	Interventional
Intervention:	Device: Percutaneous mitral valve repair
Study Phase:	Phase II
Study Design:	Treatment, Randomized, Open Label, Active Control, Parallel Assignment, Safety/Efficacy Study
Expected Enrollment:	350 patients
Victoria Enrollment:	0 at present, anticipated 10 patients
Principal Investigator:	Eric Fretz, MD
Co-Investigator:	W. Peter Klinke, M.D.
Co-Investigator:	Anthony Della Siega, M.D.
Co-Investigator:	J. David Hilton, M.D.
Co-Investigator:	J.G. Ofiesh, M.D.
Co-Investigator:	Michael Van der Wal, M.D.
Co-Investigator:	Manjeet Mann, M.D.
Co-Investigator:	Richard R. Mildenberger, M.D.
VHIF Coordinator	Liz Reimer, RN, Noreen Lounsbury, BN
Sponsor:	Evalve Inc.
Study Progress:	Start: May 2006 — End: 2012

How It Happens
Patients who exhibit moderate to severe mitral valve regurgitation on echocardiography exam are potential candidates for the Everest-II study. After consultation and consent, the study patient will undergo screening procedures that include trans-thoracic and trans-esophageal echocardiograms, performed by Dr. Manjeet Mann, assisted by Vern Parkinson, Echo Sonographer,

Featured Trials (continued)

Vancouver Island Health Authority.

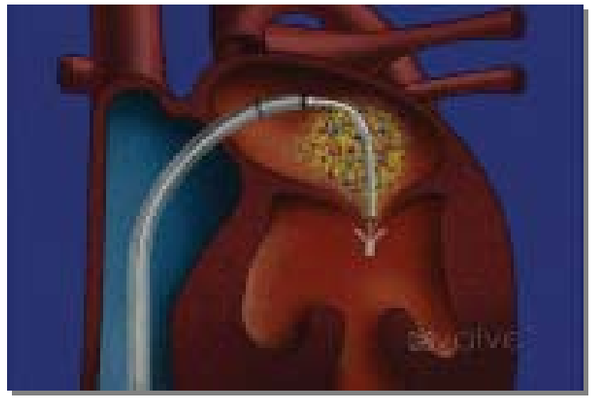
Eligible patients are randomly placed into either of two arms of the study. Study patients will undergo either conventional valve repair/replacement surgery, or the cardiovascular valve repair system procedure will be performed using the experimental MitraClip™.

The percutaneous mitral valve repair procedure is performed by Dr. Eric Fretz, or Dr. Anthony Della Siega.

Patients are administered a general anaesthetic by Dr. Michael Van der Wal, while in the Heart Cath Lab. Dr. Manjeet Mann provides imaging guidance via a trans-esophageal echocardiogram. Dr. John Ofiesh, Cardiovascular Surgeon, provides surgical expertise throughout the procedure.

Once discharged from the hospital, study patients will be seen in periodic follow-up visits at the VHIF office over the course of a twenty-four month period. Study patients undergo physical exams, laboratory screening and trans-thoracic echocardiogram procedures.

Knowledge Gained
The CVRS is designed to enable interventional cardiologists to perform a percutaneous repair of the mitral valve as an alternative to the conventional open heart surgical approach. This is the first non-surgical mitral valve repair research trial conducted through the Royal Jubilee Hospital. Victoria is one of only two sites in Canada participating in this study (Toronto is the other site).



Evalve System

The ERASE Trial

Purpose
The ERASE trial involves the use of an investigational drug called rHDL (reconstituted High Density Lipoprotein).

The ERASE trial is designed to evaluate the effectiveness and safety of rHDL in reducing the total amount of plaque (blockage) in the arteries of the heart.

Study Snapshot	ERASE
Patient Condition:	Acute Coronary Syndromes
Official Title:	Regression of Coronary Atherosclerotic Lesions After rHDL Infusions in Acute Coronary Syndrome Patients as Assessed by Intravascular Ultrasound
Study Type:	Interventional
Intervention:	Drug: rHDL
Study Phase:	Phase II
Study Design:	Treatment, Randomized, Double-Blind, Placebo Control, Parallel Assignment, Safety/Efficacy Study
Expected Enrollment:	180 patients
Victoria Enrollment:	4 patients (to a maximum of 12 patients)
Principal Investigator:	W. Peter Klinke, M.D.
Co-Investigator:	J. David Hilton, M.D.
Co-Investigator:	Malcolm B. Williams, M.D.
Co-Investigator:	Richard R. Mildenberger, M.D.
Co-Investigator:	R. David Kinloch, M.D.
Co-Investigator:	Eric Fretz, M.D.
Co-Investigator:	Anthony Della Siega, M.D.
VHIF Coordinators	Sheryll Sorensen, RN; Lynn Mitchell, RN
Sponsor:	CSL Ltd.
Study Progress:	Start: July 2005 — End: 2007

Study Status
This Canadian trial is in the early stages of enrollment with about one-third of the required 180 patients randomized into the trial as at April, 2006.

How it Happens
Patients admitted to the hospital with a diagnosis of acute coronary syndrome proceed to the Heart Cath Lab where a diagnostic coronary angiogram is performed. If necessary, a PTCA will follow the angiogram. A stent may be placed in the artery at this time.

While in the Heart Cath Lab study patients will have an IVUS performed and laboratory tests completed. These IVUS images are sent to a central (core) laboratory located at the Montreal Heart Institute where the images undergo analysis for a determination of the plaque burden.

At this point study patients are randomized to either of two arms of the study. The first arm is the study drug arm and the second arm is the placebo arm. An intravenous admixture is prepared in the RJH Pharmacy and administered to the study patient while in the recovery room or after discharge at the VHIF clinic. There are four infusions in total to be administered once per week over a four week period.

Study patients return to the Royal Jubilee Hospital two to three weeks after their last infusion for a coronary angiogram and IVUS procedure. This second IVUS procedure is performed to assess the plaque burden after administration of the study drug or placebo.

Study Challenges
This trial is limited to those sites with cardiologists and CV technicians who have received training in IVUS equipment.

Participation in this trial requires a high degree of commitment as

Featured Trials (continued)

there are four occasions when the study patient must undergo a lengthy intravenous infusion. The research personnel of VHIF strive to improve the comfort level for study patients during the infusion sessions by providing access to television, DVD movies, and/or a computer.

Knowledge Gained
Conventional treatments for ACS patients, including anti-platelet therapy (aspirin, clopidogrel) and blood thinners (heparin) do not reduce the amount of plaque in the artery. Should plaque-reducing drug therapies demonstrate effectiveness, this would improve the treatment of patients with ACS.

Clinical Trials In-Process at VHIF

Clinical trials conducted through VHIF focus on treatments for cardiovascular patients.

Each clinical trial is conducted according to a pre-determined and distinct care plan (protocol). Clinical trial protocols range in duration from two to sixty months and more.

Close to thirty trials are underway through the VHIF as at May 2006.

Clinical Trials In-Process

	Study	Patient Diagnosis
	Enrolling:	
1	ApexAMI	Acute Myocardial Infarction (AMI)
2	Beautiful	Coronary Artery Disease (CAD) and Congestive Heart Failure (CHF)
3	Centaurus	Acute Cornoary Syndrome (ACS)
4	*EarlyACS*	*ACS*
5	Erase	ACS
6	Everest-II	Valvular Heart Disease
7	Freedom	Diabetes, CAD
8	Frontier-II	CAD
9	Improve-IT	ACS
10	MerlinTIMI36	ACS
11	*MerlinTIMI36*	*ACS*
12	Northern	Inoperable-CAD
13	SnapistIII	CAD
14	SOX	Peripheral Vascular Disease (PFD)
15	Triumph	Cardiogenic Shock
16	Zesca	ACS
	No Longer Enrolling. Study Patients in Follow-Up:	
17	A5091005	CAD
18	Acclaim	CHF
19	Agent4	Inoperable-CAD
20	Assent4	AMI
21	Astronomer	valvular heart disease
22	C-Cirus	CAD
23	Everest	CHF
24	Ipreserve	CHF
25	Oat	CAD
26	Periscope	Diabetes, CAD
27	Stradivarius	CAD
28	Wave	PVD

A Refresher – "Clinical Trials 101"

Definition
A clinical trial is a research study design for testing the safety and efficacy of a specific treatment, medical device, and/or drug. Clinical trials are the established method for evaluating a new treatment, device and/or drug against the current standard treatment, or placebo, or both, for a particular disease.

How a clinical research trial progresses
1. Researchers design a clinical trail and obtain approval to proceed by governmental agencies.

2. The clinical trial is initiated. Patients are randomized into the trial (meet the criteria of inclusion for the study).

3. Patients are treated according to the study protocol and followed regularly by research staff for a defined period of time.

4. At the end of the trial collected data are analyzed statistically to determine how the new treatment, medical device, or drug compared to the current standard treatment.

The superior treatment, whether it is the new or current standard, becomes the standard treatment. Of equal importance is the knowledge and experience gained through clinical trials research. This new knowledge will help to provide better care for cardiovascular patients now and into the future.

Study Phases
Clinical trials are designated as Phase I, II, III, or IV, based on the type of questions that the study is seeking to answer.

Phase I - Researchers test a new drug or treatment in a small group of healthy volunteers (between 20-80) to evaluate its safety, determine a safe dosage range, and identify side effects.

Phase II - The study drug or treatment is given to a larger group of patients (between 100-300) who have the disease under study to determine its effectiveness and to further evaluate its safety.

Phase III - The study drug or treatment is given to large groups of patients (between 1,000-3,000) to confirm its effectiveness, to monitor side effects, and to compare it to commonly used treatments.

Phase IV - Phase IV trials are conducted when researchers want information about the possible risks and benefits that did not show up in earlier testing and that could be associated with long-term effects of the new drug treatment.

Ethics Approval for Research in Victoria

All clinical research studies under consideration by VHIF must first be approved by the Therapeutic Products Directorate (TPD) of Health Canada and/or the U.S. Food and Drug Administration (FDA). All research conducted through VHIF must also be reviewed and approved by the Research Review & Ethical Approval Committee (RREAC) of the Vancouver Island Health Authority. Only after the RREAC issues a Certificate of Approval will a new trial be coordinated through VHIF.

Clinical Fellowships

Specialist physicians apply from all over the world to train in Victoria as a Cardiovascular Clinical Fellow where they receive training in advanced interventional cardiology techniques. VHIF sponsors Clinical Fellows who live and train in Victoria for typically a 12-month period.

VHIF is presently sponsoring two fellows:

- Dr. Alexander Chase (England)
- Dr. Andrew Small (Australia)

VHIF first began sponsoring Cardiovascular Clinical Fellows in 1999. Since then, Victoria has hosted Cardiovascular Clinical Fellows from Sweden, Australia, Iceland, China, England, Ireland, Greece, and Scotland.

Dr. J. David Hilton, FRCP(C), FACC, is the Director of Fellowship Training.

Research by Fellows

While Clinical Fellows are training in the Heart Cath Lab of the Royal Jubilee Hospital, they will also conduct original research studies. Clinical Fellows identify an area of patient care that merits further study, they then design and conduct an original research project which will ultimately result in improvements to the care of cardiovascular patients.

Dr. David Hilton

Much of the research conducted by Clinical Fellows has focused on the methods of treatment for patients receiving PCI. For example, in Victoria, the trans-radial approach (via the arm) is the preferred method for PCI versus the femoral (via the leg) approach. Although the trans-radial approach is associated with fewer vascular complications, it remains to be universally accepted as an alternative option to the femoral approach. Research into the trans-radial approach benefits all PCI patients.

Dr. Alex Chase is currently conducting two original research projects:

RAPID-ACS

A clinical study investigating the safety, efficacy and feasibility of Bivalirudin facilitated same-day discharge following a radial artery angioplasty in patients with non-ST elevation acute coronary syndrome.

BICARB

A clinical study investigating the optimum methods of preventing further kidney damage, caused by angiogram contrast in patients with known kidney impairment who require an angiogram. This study will evaluate the clinical usefulness of sodium bicarbonate for the prevention of contrast induced nephropathy in patients undergoing a coronary procedure.

JACC
JOURNAL of the AMERICAN COLLEGE of CARDIOLOGY

Vascular Communications of the Hand in Patients Being Considered for Transradial Coronary Angiography: Is the Allen's Test Accurate?

Michael J. Greenwood, Anthony J. Della-Siega, Eric B. Fretz, David Kinloch, Peter Klinke, Richard Mildenberger, Malcolm B. Williams and David Hilton
December 2005

Featured Research

A research study into the accuracy of the Allen's Test (a method used to determine if a patient is a candidate for the trans-radial approach) led by Dr. Michael Greenwood, while a Clinical Fellow training in the RJH Heart Cath Lab in 2003 - 2004, was recently published in the December edition of the Journal of the American College of Cardiology (JACC).

VHIF Personnel

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Mission Statement

The Victoria Heart Institute Foundation is a non- profit, charitable organization dedicated to conducting and supporting cardiovascular research in Victoria.

With the knowledge we acquire in the etiology and management of cardiovascular disease from the results of clinical trials, we seek to improve the health status of cardiovascular patients in British Columbia.