

# 香港大學心臟血管研究所

THE INSTITUTE OF CARDIOVASCULAR  
SCIENCE AND MEDICINE



*1999 Annual Report*

## Mission Statement of the Institute of Cardiovascular Science and Medicine

*The Institute of Cardiovascular Science and Medicine (ICSM) commits itself to strive for excellence in research, teaching and training in cardiovascular sciences which contributes to the prevention and patient management of cardiovascular diseases in Hong Kong.*

*We shall offer the highest standards of teaching research and scholarship in an interactive environment conducive to creativity, to innovative learning and to freedom of thought, enquiry and expression in all aspects of cardiovascular sciences.*

*We shall continue to undertake research, teaching and other forms of service in clinical and basic cardiovascular sciences which will advance our quest for wisdom, truth and excellence in biomedical science at large.*

*We shall make known the mission of this Institute in Hong Kong and internationally*

## Governance

### Council

The members of the Institute elect a Council, who are responsible for carrying out the work of the Institute according to its Mission, Objectives, By-Laws and Regulations. The Council consists of the Officers, the immediate Former Director (if available), and three to ten Council Members. The Officers of the Institute are the Director, Deputy Director, Honorary Secretary and Honorary Treasurer. The first elected Council of the Institute completed its 2-year term of office in 1999, and the second Council was duly elected at the Annual General Meeting on 30<sup>th</sup> October 1999. The present members of the Council are:

Director:	Professor C.P. Lau	Council	Dr. B.M.Y. Cheung
Deputy		Members:	Dr. Y.F. Cheung
Director:	Professor R.Y.K. Man		Dr. M.L. Fung
Honorary			Professor G.W. He
Secretary:	Dr. H.J. Ballard		Professor C.R. Kumana
Honorary			Dr. K.L.F. Lee
Treasurer:	Dr. A.K.T. Chau		Dr. Karmin O
			Professor M.P. Leung
			Dr. H.F. Tse
			Professor T.M. Wong

### Fellowship & Grants Sub-Committee

Professor G.W. He  
Professor C.R. Kumana  
Professor T.M. Wong

Professor R.Y.K. Man  
Professor M.P. Leung

### Membership Sub-Committee

Dr. H.J. Ballard  
Professor T.M. Wong

Professor G.W. He

### International Advisory Board

The International Advisory Board comprises heads of world-renowned cardiovascular research centres around the world, who advise the Institute's Council on the development and future direction of the Institute. The members of the Board are:

Professor Morris Brown, University of Cambridge  
Professor John Cairns, Dean, University of British Columbia  
Professor John Camm, University of London  
Professor Victor Dzau, Harvard University  
Professor David Hearse, Director of the Rayne Institute, London  
Sir John Vane, Nobel Laureate, Director of the William Harvey Institute, London

# Membership

Membership of the Institute of Cardiovascular Science and Medicine increased by 30% in 1999. Membership currently stands at 86, comprising 12 Founding Members, 34 Full Members, 12 Associate members and 28 Affiliate Members.

## Criteria for membership

Clinicians, scientists, researchers and students with an interest in the cardiovascular field are invited to become members of the Institute. The classes of membership open to applicants are Full, Associate or Affiliate Membership.

All applicants for admission shall

1. Be at least 18 years of age; and
2. Be of good character and repute; and
3. Undertake in writing to adhere to the By-Laws of the Institute, as amended from time to time.

Applicants for admission as a Full Member shall also

1. Be a full time or honorary teacher (Assistant Professor, Honorary Clinical Lecturer or above) of the University of Hong Kong or be deemed to be holding an equivalent position; and
2. Be engaged in research in cardiovascular science or cardiovascular medicine, as evidenced by his or her published works.

Applicants for admission as Associates shall also

1. Possess either a medical degree (MBBS or equivalent) plus a higher qualification (MRCP or equivalent), or a doctorate (PhD or equivalent) in science; and
2. Be engaged in research in cardiovascular science or cardiovascular medicine.

Applicants for admission as Affiliates shall also

1. Possess a University degree or equivalent in medicine, nursing or science; and
2. Be engaged in or have a strong interest in cardiovascular research.

Applications for membership, accompanied by the appropriate supporting documents (eg. resume, list of relevant publications, copies of certificates) should be submitted to the Honorary Secretary, to whom membership enquiries may also be addressed.

# RESEARCH ACTIVITIES OF THE ICSM

## Organisation of Research

Discussions continued throughout 1999 on how to facilitate and promote collaborative research in cardiovascular science and medicine among our members. As a result, the Institute's collaborative research program has been restructured into three special-interest groups, in which we have a sufficient critical mass of highly active researchers to further develop the field. The research groupings are as follows:

**Atherosclerosis** (convenors: Professor R.Y.K. Man and Dr. Karmin O)

researchers: Professor S.W.K. Cheng, Dr. L. Chow, Professor A.J. Hedley, Professor C.R. Kumana, Professor T.H. Lam, Professor C.P. Lau

**Hypertension** (convenor: Dr. Bernard Cheung)

researchers: Professor C.R. Kumana, Professor C.P. Lau, Dr. K.L.F. Lee, Dr. F.M. Mo, Dr. K.M. Tam, Professor F. Tang

**Hypoxia & myocardial function** (convenor: Professor T.M. Wong)

researchers: Dr. H.J. Ballard, Dr. J.P. Bourreau, Dr. A.K.T. Chau, Dr. Y.F. Cheung, Dr. M.L. Fung, Professor C.R. Kumana, Dr. M.S. Lee, Professor M.P. Leung, Dr. F.M. Mo, Dr. H.F. Tse

Within these groupings, several collaborative research proposals were submitted to the RGC for funding consideration; the outcome of those applications will be available in May-June 2000.

### Research grants awarded by the RGC to ICSM members in 1999

Principal Investigator	Project Title	Award (HK\$)
Professor G.W. He	Protection of coronary endothelium – smooth muscle function during cardiac surgery.	991,047
Dr. H.Y. Lan	Regulation of renal macrophage migration inhibitory factor (MIF) expression: mechanism of MIF in renal immune injury.	775,500
Professor T.M. Wong	Delayed cardioprotection of preconditioning with ischaemia and k-opioid: Ca <sup>2+</sup> homeostasis, signal transduction and clinical implications.	709,500
Dr. M.L. Fung	The role of voltage-gated sodium channels in central neurons during hypoxia.	647,900
Dr. B.M.Y. Cheung	Angiotensin-converting enzyme, bradykinin and endothelial function	597,880
Dr J.P. Bourreau	Modulation of voltage-dependent calcium entry during muscarinic stimulation in airway smooth muscle	577,500
		<hr/> 4,299,327

## Scientific Meetings

The Institute of Cardiovascular Science and Medicine organised two Scientific Meetings in 1999, and also hosted the core curriculum in cardiology for trainee cardiologists at the University of Hong Kong:

### University Program 1999: Core Curriculum in Cardiology

The ICSM hosted this year's core curriculum in cardiology, which was held at the Gold Coast Hotel on July 24-25 1999, and had the theme of Coronary Artery Disease.

### The Asia-Pacific Cardiology Forum

The Asia-Pacific Cardiology Forum was organised by the ICSM, in collaboration with the Tokyo Woman Medical University, and held at the Hyatt Regency Hotel, Osaka, Japan on 1 –3 October 1999. Aimed at practicing cardiologists, the programme utilised interactive case presentations, panel discussions and plenary lectures to enhance the knowledge of delegates in the clinical management of common cardiology problems. Particular foci of attention included heart failure, coronary artery disease, atrial arrhythmia, preventive approaches to sudden death, and new frontiers in cardiovascular pharmacotherapy. Distinguished speakers at the forum included ICSM members Professor C.P. Lau, Dr. Kathy Lee, Dr. Katherine Fan, Dr. William Ng, Professor John Sanderson, Dr. H.F. Tse, and Dr. S.H. Wan, Tokyo Woman Medical College members Dr. Masatoshi, Dr. Morio Shoda and Dr. Yukio Tsurumi, as well as international contributors Professor Philip Barter (Royal Adelaide Hospital, Australia), Dr. Alfred Cheng (Tan Tock Seng Hospital, Singapore), Dr. Ryuichi Morishito (Osaka University, Japan), and Dr. Delon Wu (Chang Gung University College of Medicine, Taiwan)

### The Third Annual Scientific Meeting: Bridging Cardiovascular Science and Medicine

The Third Annual Scientific Meeting was held at the Hong Kong Convention and Exhibition Centre on 30<sup>th</sup> October 1999. As always, the annual scientific meeting focussed on the interaction of cardiovascular science with cardiovascular medicine: session themes included the bridging of cardiovascular science and medicine, as well as vascular smooth muscle and endothelium, cardiac surgery and cardiology. The meeting attracted almost 250 attendees, and more than one third of the papers submitted were from outside Hong Kong, including China, Japan, Europe and North America. Abstracts from the meeting were published in the October 1999 issue of the Journal of the Hong Kong College of Cardiology (volume 7, number 2). Selected papers from the meeting will be published later this year in an international journal, Clinican and Experimental Pharmacology and Physiology. Distinguished speakers at the meeting included Professor Wolfgang Graier from the University of Graz, Austria, Professor Peter Pang from the University of Hong Kong and Professor Finn Waagstein from the University of Göteborg, Sweden. Professor Albert Starr, the great pioneer of heart valve transplantation, gave a video presentation.

## Lectures

Professor Peter K.T. Pang, Program Director of the International Research program on Traditional Chinese and Natural Medicine, University of Hong Kong, gave a very interesting talk entitled "Parathyroid hypertension (hypercalcemic) factor, a primary causative factor for low renin hypertension" to members of the Institute and the Department of Physiology on Wednesday March 17<sup>th</sup> 1999.

Professor Alexander Turpie, Professor of Medicine at McMaster University delivered a lecture to the Institute entitled "Anti-thrombolytic therapy in coronary ischaemia" on Tuesday May 25<sup>th</sup> 1999. Professor Turpie is a world authority on thrombolytics, low-molecular-weight heparin and antiplatelet therapy. He was involved in the ISIS studies and the recent ESSENCE trial, and we were very fortunate to have such a distinguished speaker talking on such a hot topic.

## Visitors

Professor Cecilia Oakley visited Hong Kong in February as an examiner for the Royal College of Physicians. She met with a number of the ICSM Council members during her stay, and provided valuable advice on the development of the Institute towards an Area of Excellence.

## ICSM on the web

A web site was set up for the Institute, in order to disseminate up-to-date information on the Institute's activities and publications to both members and non-members. The web site address is <http://www.hku.hk/facmed/icsm>.

## ICSM on TV

Professors T.M. Wong and C.P. Lau were interviewed in February by TVB about calcium-channel-blocking Chinese herbs for the evening news.

## EDUCATION

ICSM members are already strongly committed to medical education. At the undergraduate level, we make up one half of the CVS module planning group, including the Coordinator, and many more of our members provide expert advice in the planning of the CVS tutorial cases. At the postgraduate level, our members are responsible for the core curriculum in cardiology. We also contribute extensively to the training of research postgraduates: at present, 28 research postgraduate students are formally affiliated to the ICSM. The close collaboration between both scientists and clinicians in the cardiovascular field provides a broad-based background to their training, and our on-going programme of seminars and informal workshops provides a stimulating research environment.

## ICSM Publications in 1999

Proceedings of the Third Annual Scientific Meeting of the ICSM "Bridging Cardiovascular Science and Medicine" were published in the Journal of the Hong Kong College of Cardiology, Volume 7, No. 2, which appeared in October 1999.

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## Publications of ICSM Members in 1999

Au WY, Tam SCF, Lam CW, Ho KM and Kwong YL. Hypertrichosis Associated with Blastic Transformation of Agnogenic Myeloid Metaplasia. *Journal of the American Academy for Dermatology* (in press).

Autelitano DJ and Tang F. Co-expression of preproadrenomedullin and a putative receptor gene in vascular smooth muscle suggests an autocrine role for adrenomedullin. *Clinical Science* 96: 494-498 (1999).

Autelitano DJ, Tang F and Little PJ. Rapid regulation of adrenomedullin in metabolically compromised vascular smooth muscle cell. *Journal of Hypertension* 17: 373-379 (1999).

Bian J-S, Zhang W-M, Pei J-M and Wong TM. The role of phosphodiesterase in mediating the effect of protein kinase C on cyclic AMP accumulation upon  $\kappa$ -opioid receptor stimulation in the rat heart. *Journal of Pharmacology and Experimental Therapeutics* 292: 1-6 (2000).

Cheng B, Essackjee HC and Ballard HJ. Evidence for control of adenosine metabolism in rat oxidative skeletal muscle by changes in pH. *Journal of Physiology* 522: 467-477 (2000).

Cheng SWK, Ting ACW, Lau H and Wong J. Epidemiology of atherosclerotic peripheral arterial occlusive disease in Hong Kong. *World Journal of Surgery* 23: 202-206 (1999).

Cheng SWK, Ting ACW, Lau H and Wong J. Immediate stenting for iliofemoral occlusive lesions: A surgeon's early experiences. *Journal of Endovascular Surgery* 6: 256-263 (1999).

Cheng SWK, Wu LLH, Lau H, Ting AWC and Wong J. Prevalence of significant carotid stenosis in Chinese patients with peripheral coronary artery disease. *Australian and New Zealand Journal of Surgery* 69: 44-47 (1999).

Cheng SWK, Wu LLH, Ting ACW, Lau H and Wong J. Screening for asymptomatic carotid stenosis in patients with peripheral vascular disease: a prospective study and risk factor analysis. *Cardiovascular Surgery* 7: 303-309 (1999).

Cheng SWK, Wu LLH, Ting ACW, Lau H, Lam LK and Wei WI. Irradiation-induced extracranial carotid stenosis in patients with head and neck malignancies. *American Journal of Surgery* 178: 323-328 (1999).

Cheung BMY and Lau CP. Fosinopril reduces left ventricular mass in untreated hypertensive patients: a controlled trial. *British Journal of Clinical Pharmacology* 47: 179-187 (1999).

Cheung BMY, Lau CS, Leung RYH, Tong KK and Kumana CR. Plasma adrenomedullin level in systemic lupus erythematosus. *Rheumatology* (in press).

Cheung BMY, Leung R, Shiu S, Tan KCB, Lau CP, Kumana CR. *HpaII* Polymorphism in the Atrial

Natriuretic Peptide gene and hypertension. *American Journal of Hypertension* 1999, 12: 524-527

Cheung CY and Tang F. The effect of streptozotocin-diabetes on  $\beta$ -endorphin level and proopiomelanocortin gene expression in the rat pituitary. *Neuroscience Letters* 261: 118-120 (1999).

Cheung F, Siow YL, Chen WZ and O K. Effect of Ginkgo biloba inhibits the expression of inducible nitric oxide synthase in endothelial cells. *Biochemical Pharmacology* (in press).

Chow K, Cheung F, Lao TTH and O K (1999) Effect of homocysteine on the production of nitric oxide in endothelial cells. *Clinical and Experimental Pharmacology and Physiology* (in press).

Choy PC, Mymin D, Zhu Q and O K (1999) Homocysteinemia - A risk factor for atherosclerosis. *Molecular and Cellular Biochemistry* (in press).

Chui, W H, Chiu SW, Cheung D, Lee W T, Mok CK, and He GW: Surgical management of blunt traumatic rupture of the descending thoracic aorta. *Annals of Thoracic and Cardiovascular Surgery* 1999,5:109-12.

Daniel EE, Low AM, Lu-Chao H, Gaspar V, and Kwan CY. Vascular smooth muscle of canine mesenteric artery contains primarily  $\alpha_{1A}$ -adrenoceptor subtype. *Journal of Pharmacology and Experimental Therapeutics* 291: 1-9 (1999).

Das R, Fung ML and Ballard HJ. The influence of chronic hypoxia on the functional response to endothelin of the pulmonary artery from adult rats. *Journal of Biomedical Research* (in press).

Das R, Kravtsov GM, Ballard HJ and Kwan CY. L-NAME inhibits  $Mg^{2+}$ -induced relaxation of rat aorta in the absence of endothelium. *British Journal of Pharmacology* 128: 493-499 (1999).

Fan K, Lee K, Chau E, Yip A, Chow WH and Lau CP. Implantable cardioverter defibrillator: clinical performance of dual chamber versus single chamber devices. *Journal of Hong Kong College of Cardiology* 7: 96-103 (1999).

Fan K, Lee KL and Lau CP. Dual chamber implantable cardioverter-defibrillator: benefits and limitations. *Journal of Interventional Cardiac Electrophysiology* 3: 239-245 (1999).

Fleming MA, Oral H, Kim KH, Tse HF, Pelosi F, Michaud GF, Knight BP, Strickberger AS and Morady F. Electrocardiographic predictors of successful ablation of tachycardia or bigeminy arising in the right ventricular outflow tract. *American Journal of Cardiology* 84: 1266-1268 (1999).

Froese DE, McMaster J, Man RYK, Choy PC and Kroeger EA. Inhibition of endothelium-dependent vascular relaxation by lysophosphatidylcholine: impact of lysophosphatidylcholine on mechanisms involving endothelium-derived nitric oxide and endothelium derived hyperpolarizing factor. *Molecular and Cellular Biochemistry* 197: 1-6, (1999).

Fung M-L, Corning MDR, and Haddad GG. Sodium homeostasis in rat hippocampal slices during oxygen and glucose deprivation: Role of voltage-sensitive sodium channels. *Neuroscience Letters*, 275

(1): 41-44, (1999).

Gan T, Pei J-M, Chan I and Wong TM. Increased expression of Na<sup>+</sup>-H<sup>+</sup> exchanger gene and intracellular pH upon k-opioid receptor stimulation in the heart. *Life Sciences* 66 (4): 355-361 (2000).

Ge ZD and He GW. Altered EDHF-mediated endothelial function in coronary micro-arteries by St. Thomas' Hospital solution. *Journal of Thoracic and Cardiovascular Surgery* 118: 173-180 (1999).

Hattori M, Nikolic-Paterson DJ, Miyazaki K, Isbel NM, Lan HY, Atkins RC, Kawaguchi H, Ito K: Mechanisms of glomerular macrophage infiltration in lipid-induced renal injury *Kidney Int. Supplement* 71: S47-S50 (1999).

He GW. Arterial grafts for coronary artery bypass: biological characteristics, functional classification, and clinical choice (current review). *Annals of Thoracic Surgery* 67: 277-284 (1999).

He GW. Arterial grafts for coronary artery bypass surgery: a text book for cardiovascular clinicians and researchers. Pub: Springer-Verlag. (1999)

He GW. Coronary endothelial function in cardiac surgery. *Clinical and Experimental Pharmacology and Physiology* (in press).

He GW and Yang CQ. Inhibition of vasoconstriction by thromboxane A2 antagonist GR32191B in the human radial artery. *British Journal of Clinical Pharmacology* 48: 207-215 (1999).

He GW and Yang CQ: Comparison of vasorelaxant effect of nitroprusside and nitroglycerin in the human radial artery. *British Journal of Clinical Pharmacology* 48: 99-104 (1999)

He Y and Lam TH. A review on studies on smoking and coronary heart disease in China and Hong Kong. *Chinese Medical Journal* 112: 3-8 (1999).

Ho DSW. The Asia Pacific Cardiovascular Stenting Symposium and Live Demonstration. (1999) (Course Book).

Ho SY, Lam TH, Hedley AJ and Mak KH. Interviewing in Hong Kong death registries to obtain data on smoking and mortality. *Nicotine & Tobacco Research* 1: 192-3 (1999).

Huang M, Li J-P, Toeh H and Man RYK. Low concentrations of 17 $\beta$ -estradiol reduce oxidative modification of low-density lipoproteins in the presence of vitamin C and vitamin E. *Free Radical Biology and Medicine* 27: 438-441, (1999).

Hwang ISS and Tang F. The distribution and gene expression of adrenomedullin in the rat brain: peptide/mRNA and precursor/active peptide relationship. *Neuroscience Letters* 267: 85-88 (1999).

Kou M, Kumana CR, Ip MSM, Lauder IJ, Lam W K and Chan JCK. Bronchodilator responses to salbutamol using diskhaler versus metered-dose inhaler. *Journal of Asthma* 35: 505-511 (1999).



- Kumana CR. Deja Vu. *Journal of the American Medical Association - SE Asia* 15: 5-6 (1999).
- Kumana CR, Cheung BMY and Lauder IJ. Impact of statins in different circumstances. *Journal of the American Medical Association* 282: 1899-1901 (1999).
- Kumana CR, Ching PTY, Cheung E, Kong Y, Kou M, Chan CK, Chu KM, Seto WH and Lam SK. Antiulcer Drug Prescribing in Hospital successfully influenced by "Immediate Concurrent Feedback". *Clinical Pharmacology and Therapeutics* 64: 569-74 (1999).
- Kwan CY. Heterogeneity of vascular smooth muscle  $\alpha_1$ -adrenoceptors in canine blood vessels. *Clinical and Experimental Pharmacology and Physiology* 26: 822-823 (1999).
- Kwan CY. Membrane abnormalities of vascular smooth muscle of mesenteric arteries of spontaneously diabetic BB rats. *Journal of Smooth Muscle Research* 35: 77-86 (1999).
- Kwan CY. The Effects of different ginseng extracts on vascular contraction in vitro: evidence for Yin-Yang principle. *Acta Phytotherapeutica* 2: 73-77 (1999).
- Kwan CY and Kwan TK. Dynamic digital fluorescence ratio imaging of cell calcium in vascular endothelial cells. *Acta Pharmacologica Sinica* 20: 1-6 (1999).
- Kwan CY and Kwan TK. The in vitro effects of Panax notoginseng saponins on vascular endothelial cells. *Proceeding of the International Ginseng Conference '99*. (in press).
- Kwan CY, Ma MF, and Hui SCG. Inhibition of endothelium-dependent vascular relaxation by tetrandrine. *Life Sciences* 64: 2391-2400 (1999).
- Kwan CY and Zheng XF. Cyclopiazonic acid inhibits  $Ca^{2+}$  sequestration by SR and activates  $Ca^{2+}$  influx via nifedipine-sensitive  $Ca^{2+}$  channels in rat tail artery. *Biomedical Research* 10: 121-125 (1999).
- Kwan YW, To KW, Lau WM and Tsang SH. Comparison of the vascular relaxant effects of ATP-dependent  $K^+$  channel openers on aorta and pulmonary artery isolated from spontaneously hypertensive and Wistar-Kyoto rats. *European Journal of Pharmacology* 365: 241 -251 (1999).
- Lai J-H, Ho L-J, Kwan CY, Chang DM and Lee TC. Plant alkaloid tetrandrine and its analogues block CD28-costimulated activities of human peripheral blood T cells: potential immunosuppressants in transplantation immunology. *Transplantation* 68: 1383-1392 (1999).
- Lam C, Leung SK, Lau CP, Tse HF and Ayers GM. Improved efficacy of mode switching during atrial fibrillation using automatic atrial sensitivity adjustment. *Pacing and Clinical Electrophysiology* 22: 17-25 (1999).
- Lam TH and Hedley AJ. Environmental tobacco smoke in Asia: slow progress against great barriers. *Journal of the American Medical Association Southeast Asia* 15: 7-9 (1999).

Lam TH, as a participant and a co-chair in a working group in the International Consultation. Tobacco Free Initiative Consultation Report: International Consultation on Environmental Tobacco Smoke (ETS) and Child Health. Geneva: World Health Organization. (28 pages) (1999).

Lam TH, Liu LJ, Janus ED, Bourke C and Hedley AJ. The relationship between fibrinogen and other coronary heart disease risk factors in a Chinese population. *Atherosclerosis* 143: 405-13 (1999).

Lam TH, Liu LJ, Janus ED, Lau CP and Hedley AJ. Fibrinogen, angina and coronary heart disease in a Chinese population. *Atherosclerosis* (in press).

Lau CP and Kumana CR. Fenfluramine Phentermin Valvulopathy: Fact or Coincidence? *Medical Progress* 26: 5-7 (1999) with permission from the Journal of the Hong Kong College of Cardiology

Lau CP, Tse HF and Ayers GM. Defibrillation guided radiofrequency ablation of atrial fibrillation secondary to an atrial focus. *Journal of the American College of Cardiology* 33: 1217-1226 (1999).

Lee KL, Chun HM, Liem LB and Sung RJ. Adenosine response in accelerated junctional rhythm: insights into the underlying mechanism. *Pacing and Clinical Electrophysiology* 22(1): 866-870 (1999).

Lee TMC and Ho DSW. Preliminary Neuropsychological Outcomes of Angioplasty and Stenting of Extracranial Cerebral Arteries. *Perceptual and Motor Skills* 88: 267-270 (1999).

Leung YM and Kwan CY. Current perspectives in the pharmacological studies of store-operated Ca<sup>2+</sup> entry blockers. *Japanese Journal of Pharmacology* 81: 253-258 (1999).

Li J, Huang M, Teoh H and Man RYK. Panax quinquefolium saponins protects low density lipoproteins from oxidation. *Life Sciences* 64: 53-62, (1999).

Low AM, Lu-Chao H, Loke JCP, Kwan CY and Daniel EE. Insights into the unusual  $\alpha$ -adrenoceptor subtype in dog saphenous vein using phenoxybenzamine. *Journal of Pharmacology and Experimental Therapeutics* 288: 148-156 (1999).

Mo FM and Ballard HJ. The relationship between intracellular pH and adenosine output in isolated rat soleus muscle fibres. *Life Sciences* (in press).

Mok MY, Tse HF and Lau CS. Pulmonary hypertension secondary to systemic lupus erythematosus: prolonged survival following treatment with intermittent low dose iloprost. *Lupus* 8: 328-331 (1999).

Nag S, Yee B and Tang F. Chronic intracerebroventricular infusion of  $\beta$ -amyloid (1-40) results in selective loss of neuropeptides in addition to a reduction in choline acetyltransferase activity in the cortical mantle and hippocampus in the rats. *Annals of the New York Academy of Sciences* (in press).

Nag S, Yee B and Tang F. Reduction in somatostatin and substance P levels and choline acetyltransferase activity in the cortex and hippocampus of the rat after chronic intracerebroventricular

infusion of  $\beta$ -amyloid (1-40). *Brain Research Bulletin* 50: 251-262 (1999).

Ng W, Tse HF and Lau CP. GISSI-Prevenzione trial. *Lancet* 354: 1555-6 (1999). (letter)

O K, Cheung F, Sung FL, Zhu DY and Siow YL. Effect of magnesium tanshinoate B on the production of nitric oxide in endothelial cells. *Molecular and Cellular Biochemistry* (in press).

Oral H, Brinkman K, Pelosi F, Flemming M, Tse HF, Kim MH, Michaud GF, Knight BP, Goyal R, Strickberger SA and Morady F. Effect of electrode polarity on the energy required for transthoracic atrial defibrillation. *American Journal of Cardiology* 84: 228-230 (1999).

Ou YJ, Shan QX and Bourreau J-P. Endothelium-dependent effect of bradykinin and ATP on rabbit ventricular myocytes. *Life Sciences* 64(24): PL291-PL296 (1999).

Ou YJ, Shen SR, Shan QX and Bourreau J-P. L-NAME does not restore the  $\beta$ -adrenergic response in ventricular myocytes isolated from LPS-treated rabbits. *Biomedical Research* 10 (3): 213-219 (1999).

Pang FC, Wan SH and Lau CP. A lady with dyspnoea for 2 days. *The Hong Kong Practitioner*. 21(9): 435-7 (1999).

Pei J-M, Yu X-C, Bian J-S and Wong TM. Acidosis antagonizes the effects of k-opioid receptor stimulation on intracellular  $Ca^{2+}$ : involvement of  $Na^+-H^+$  and  $Na^+-Ca^{2+}$  exchanges. *American Journal of Physiology* 277 (3): C492-C500 (1999).

Qian Y and Bourreau J-P. Two distinct pathways for refilling calcium stores in permeabilized bovine trachealis muscle. *Life Sciences* 64(22): 2049-2059 (1999).

Quan A, Teoh H and Man RYK. Acute exposure to a low level of testosterone impairs relaxation in porcine coronary arteries. *Clinical and Experimental Pharmacology and Physiology* (in press).

Rosenfeldt FL, He GW, Buxton BF and Angus JA. Pharmacology of coronary artery bypass grafts. *The Annals of Thoracic Surgery* 67: 878-888 (1999).

Sanderson JE, Yu CM, Young RP, Shum IOL, Wei S, Arumanayagam M and Woo KS. Influence of gene polymorphisms of the renin-angiotensin system on clinical outcome in heart failure in the Chinese. *American Heart Journal* 137: 653-657 (1999).

Shimamoto H, Shimamoto Y, Daniel EE and Kwan CY. Relationship between intracellular  $Ca^{2+}$  and protein kinase C in agonist-induced contraction of hypertensive rat aortae. *Journal of Smooth Muscle Research* 35: 87-98 (1999).

Siow YL, Choy PC, Leung WMK and O K. Effect of *Flos carthami* on stress-activated protein kinase in the isolated ischaemic/reperfused heart. *Molecular and Cellular Biochemistry* (in press).

Strickberger SA, Tokano T, Tse HF, Kim MH, Oral H, Flemming M, Pelosi F, Michaud GF, Knight BP, Goyal R and Morady F. Target temperatures of 48 degrees C versus 60 degrees C during slow

pathway ablation: a randomized comparison. *Journal of Cardiovascular Electrophysiology* 10: 799-803 (1999).

Teoh H and Man RYK. Progesterone modulates estradiol actions: acute effects at physiological concentrations. *European Journal of Pharmacology* 378: 57-62, (1999).

Teoh H, Leung SWS and Man RYK. Short term exposure to physiological levels of  $17\beta$ -estradiol enhances endothelium-independent relaxation in porcine coronary artery. *Cardiovascular Research* 42: 224-231, (1999).

Teoh H, Leung SWS, Quan A, Hung M, Man GSK and Man RYK. Acetylcholine-mediated relaxation in rat thoracic aorta is enhanced following acute exposure to physiological concentrations of  $17\beta$ -estradiol. *Molecular and Cellular Biochemistry* (in press).

Teoh H, Quan A, Leung SWS, and Man RYK. Differential effects of  $17\beta$ -estradiol and testosterone on the contractile responses of porcine coronary arteries. *British Journal of Pharmacology* (in press).

Tesch GH, Schwarting A, Kinoshita K, Lan HY, Rollins BJ, Rubin Kelley V: Monocyte chemoattractant protein-1 (MCP-1) promotes macrophage mediated tubular, and not glomerular injury, in nephrotoxic serum nephritis. *Journal of Clinical Investigation* 103: 73-80, 1999

Ting ACW, Cheng SWK, Wu LLH and Cheung CGY. Air plethysmography in chronic venous insufficiency: clinical diagnosis and quantitative assessment. *Angiology* 50: 831-836 (1999).

Ting ACW, Cheng SWK, Wu LLH and Cheung CGY. Anatomical distribution of chronic venous insufficiency in a Chinese population. *Phlebology* 14: 29-32 (1999).

Tse HF and Lau CP. Implantable atrial defibrillators. *CEPR* (in press)

Tse HF and Lau CP. New Understandings and Options in the Management of Atrial Fibrillation. Nguyen T, Hu D, Saito S, Leng LY, Dave V (eds). In: *Practical Handbook: Consultant's Approach to Complex Cardiac Problems*. (in press)

Tse HF and Lau CP. Safety and efficacy of internal cardioversion of atrial fibrillation in patients with impaired left ventricular systolic function. *American Journal of Cardiology* 84: 1090-1092 (1999).

Tse HF, Lau CP and Ayers GM. Detection of atrial fibrillation during sinus tachycardia induced by exercise in patients with implantable atrial defibrillators. *Pacing and Clinical Electrophysiology* 22: 247-252 (1999).

Tse HF, Lau CP and Ayers GM. Heterogeneous changes in electrophysiological behaviour in the paroxysmal and chronically fibrillating human atrium. *Journal of Cardiovascular Electrophysiology* 10: 125-135 (1999).

Tse HF, Lau CP and Ayers GM. Long term outcome in patients with chronic atrial fibrillation after

successful internal cardioversion. *American Journal of Cardiology* 83: 607-609 (1999).

Tse HF, Lau CP and Ayers GM. The incidence and modes of onset of spontaneous re-initiation of atrial fibrillation following successful internal cardioversion and its prevention by intravenous sotalol. *Heart* 82: 319-324 (1999).

Tse HF, Lau CP and Camm AJ. Transvenous atrial defibrillation: Technique and clinical application. *Clinical Cardiology* (in press).

Tse HF, Lau CP, Sra JS, Crijns HJGM, Edvardsson N, Kacet S and Wyse GD. Atrial fibrillation detection and R wave synchronization by Metrix implantable atrial defibrillator: Implication for long term efficacy and safety. *Circulation* 99: 1446-1451 (1999).

Tse HF, Lau CP, Yomtov BM and Ayers GM. Implantable atrial defibrillator with a single pass dual electrode lead. *Journal of the American College of Cardiology* 33: 1974-1980 (1999).

Tse HF, Lau CP, Yu CM, Lam TF, Leung SK and Ayers GM. Clinical experience with a single pass dual electrode implantable atrial defibrillator lead for maintaining sinus rhythm in patients with recurrent atrial fibrillation. *American Journal of Cardiology* 84: 606-608 (1999).

Tse HF, Lau CP, Yu CM, Lee KL, Michaud GF, Knight BP, Morady F and Strickberger SA. Effect of the implantable atrial defibrillator on the natural history of atrial fibrillation. *Journal of Cardiovascular Electrophysiology* 10: 1200-1209 (1999).

Wan SH. Sudden Cardiac Death - A Review. *Journal of Hong Kong College of Cardiology* 7(1): 18-31 (1999).

Wang H-X, Kwan CY and Wong TM. Electrically-induced  $[Ca^{2+}]_i$  transient: a parameter for the study of cardiac drugs. *Clinical and Experimental Pharmacology and Physiology* 26 (10): 836-836 (1999). (Invited conference proceeding)

Wong ACC and Cheng SWK. Ruptured thoracoabdominal aortic aneurysm complicating Marfan Syndrome. *Annals of the College of Surgeons of Hong Kong* 4: 120-123 (1999).

Wong CM, Ma S, Hedley AJ and Lam TH. Does ozone have any effect on daily hospital admissions for circulatory diseases? *Journal of Epidemiology and Community Health* 53: 580-1 (1999).

Wong CM, Ma S, Lam TH and Hedley AJ. Coronary artery disease varies seasonably in subtropics. *British Medical Journal* 319: 1004 (1999). (Letter)

Wong CM, Ma S, Lam TH and Hedley AJ. Seasonal variation in coronary artery disease mortality in Hawaii: observational study. *British Medical Journal* (in press). (Letter)

Wong P, Wong V, Tse K K, Chan W, Ko P, Wong CM, Leung AWS, Fong PC, Cheng CH, Tai YT, Leung WH, Liu ML. A prospective study of Elective Stenting in Unprotected Left Main Coronary Disease. *Catheter Cardiovascular Intervention* 1999 46:153- 159

Woo J, Leung SSF, Ho SC, Lam TH and Janus ED. Influence of education level and marital status on dietary intake, obesity and other cardiovascular risk factors in a Hong Kong Chinese population. *European Journal of Clinical Nutrition* 53: 461-467 (1999).

Wu S, Li HY and Wong TM. Cardioprotection of preconditioning by metabolic inhibition in the rat ventricular myocyte - involvement of k-opioid receptor. *Circulation Research* 84, 1388-1395 (1999).

Yu CM and Lau CP. Synchronous biventricular pacing for chronic heart failure. *Journal of the Hong Kong College of Cardiology* 7: 32-35 (1999).

Yu CM, Lau CP, Cheung BM, Fong YM, Ho YY, Lam KB and Li LSW. Clinical predictors of morbidity and mortality in patients with myocardial infarction or revascularisation who underwent cardiac rehabilitation: The importance of diabetes mellitus and exercise capacity. *American Journal of Cardiology* (in press).

Yu CM and Sanderson JE. Different prognostic significance of right and left ventricular diastolic dysfunction in heart failure. *Clinical Cardiology* (in press).

Yu CM, Shum IOL and Sanderson JE. Plasma brain natriuretic peptide - an independent predictor of cardiovascular mortality in acute congestive heart failure. *European Journal of Heart Failure* 1: 59-65 (1999).

Yu CM, Tse HF, Wan SH, et al. Synchronous Biventricular Pacing for Heart Failure. *Asian Medical Newsletter*. 10/99: 140-2 (1999).

Yu X-C, Wang H-X and Wong TM. Cross-talk between cardiac k-opioid and b-adrenergic receptors in developing hypertensive rats. *Journal of Molecular and Cellular Cardiology* 31, 597-605 (1999).

Yu X-C, Wang H-X, Pei J-M and Wong TM. Anti-arrhythmic action of U50,488H in the isolated perfused rat heart subjected to low flow and norepinephrine - involvement of a cAMP dependent pathway. *Journal of Molecular and Cellular Cardiology* 31 (10): 1809-1819 (1999).

Yu X-C, Zhang W-M, Bian J-S and Wong TM. Pro- and anti-arrhythmic effects of a k-opioid receptor agonist: a model for the biphasic action of a local hormone in the heart. *Clinical and Experimental Pharmacology and Physiology* 26 (10): 842-844 (1999). (Invited conference proceeding)

Yu XQ, Fan J-M, Nikolic-Paterson DJ, Yang N, Mu W, Pichler R, Johnson RJ, Atkins RC and Lan HY. IL-1 up-regulates osteopontin expression in experimental crescentic glomerulonephritis in the rat. *American Journal of Pathology* 154: 833-841 (1999).

Zhang W-M, Wu S, Yu X-C, Wang H-X and Wong TM. Effects of U50,488 and bremazocine on  $[Ca^{2+}]_i$  and cAMP in naive and tolerant rat ventricular myocytes: evidence of kappa opioid receptor multiplicity in the heart. *Journal of Molecular and Cellular Cardiology* 31, 355-362 (1999).

## Grants and donations to the Institute in 1999

The Institute was shortlisted as an Area of Distinction, and was awarded a grant of \$ 1,272,508 for the further development of an area of excellence in cardiovascular science and medicine. The Institute also attracted donations from a number of outside companies, which were used to fund the Institute's programme of scientific meetings in 1999.

## Expenditure by the Institute in 1999

Eighty seven percent of the Institute's total expenditure in 1999 was on research and research-related activities; around 10 % of our expenditure was on the Third Annual Scientific Meeting (although this was fully funded from donations and registration fees), and only 1.9 % of our expenditure was required for administrative costs.

## Grants and Fellowships awarded by the Institute in 1999

\$150,000 to Professor T.M. Wong and Dr. M.L. Fung, for the employment of a research assistant to carry out a collaborative research project.

\$50,000 to Dr. A.K.T. Chau for a project on dobutamine stress echocardiography.

\$85,000 to Dr. Karmin O for a collaborative project with U.B.C., as part of the CV-PEARL initiative.

Further research expenditure in 1999 was mainly related to grants and fellowships awarded before 1999, but only taken up during 1999.

## Scientific Meetings of the Institute

All of the Institute's scientific meetings in 1999 were fully self-funding. The expenses were met by the registration fees paid by the participants in the meetings and by donations to the Institute from companies wishing to support cardiovascular research and medicine in Hong Kong.



## FUTURE AIMS

### Research

Three key areas for research collaboration have already been established, and ICSM members are committed to the development of joint research projects within those foci. In the year 2000, we expect to see the following:

- Inputs:** An increase in the number of collaborative applications for external funding by ICSM members. The more formal grouping of our members into special interest groups, with the appointment of convenors for each topic, greatly enhances the development of collaboration in key areas. Development is further enhanced by prioritising these development areas in the distribution of Institute research funds as seed funding for collaborative work.
- Outputs:** An increase in the number of joint research publications from ICSM members. By now, our existing collaborative research projects are beginning to yield results, and we expect to see an upsurge in collaborative outputs.

### Education

We plan to exploit the strong co-operation between cardiovascular scientists and clinicians, as well as our wealth of experience in medical education, by the development of a series of CD-ROMs entitled "From Basics to Bedside". Each CD would deal with a specific cardiovascular problem, and would start from the underlying science, and develop the "case" through the various treatment options and potential outcomes. This integrated approach to teaching has proven benefits, and we would make the CDs available to all medical undergraduates at HKU initially, with a view to a wider distribution, perhaps through our web site, at a later date. Development of the CD series will be co-ordinated by Dr. H.J. Ballard, who also co-ordinates the CVS teaching module in the new medical curriculum. The first "Basics to Bedside" CD will be available in 2000.

### Social and Economic Development

**Cardiovascular Risk Factors Analysis.** We plan to set up a service for the investigation of cardiovascular risk factors in patients in Hong Kong: ultimately, we would be able to address both genetic and rare biochemical factors, including for example the LDL receptor gene, familial hypercholesterolaemia, Marfan's syndrome, the fibrillin gene and BNP. In 2000, we will establish homocysteine testing, and make it available to cardiologists throughout Hong Kong. The homocysteine research project is a collaborative research project involving members of the atherosclerosis group in the ICSM and researchers in Vancouver, through the CV-PEARL initiative. Homocysteine has been shown to be a risk factor for coronary artery disease, and susceptible individuals can be successfully treated with dietary folate. At present, however, the homocysteine assay is unavailable in Hong Kong or China. Setting-up of the homocysteine assay will be co-ordinated by ICSM Council members Dr. Bernard Cheung and Dr. Karmin O, who is the principal researcher on the Hong Kong homocysteine project and the ICSM co-ordinator of the CV-PEARL collaboration.

**Hypertension Survey.** Hypertension is a major preventable risk factor of heart disease. There is no data on the incidence of hypertension in the community. This is of importance in planning prevention and research. The Hypertension Research Group (Convenor Dr. Bernard Cheung) is planning for a territory-wide survey of hypertension in the year 2000: the information generated will be of major impact to the society.