



**INTERNATIONAL ACADEMY OF CARDIOLOGY**

# **New Horizons in Cardiovascular Diseases**

**Editor**

**ASHER KIMCHI**

**MEDIMOND**

**INTERNATIONAL PROCEEDINGS**



# New Horizons in Cardiovascular Diseases

Proceedings of the

*15th World Congress on Heart Disease  
International Academy of Cardiology  
Annual Scientific Session 2010*

Vancouver, BC, Canada, July 24-27, 2010

Editor

**ASHER KIMCHI, MD, FACC, FACP, FAHA, FIACS**

*Vice Clinical Chief, Division of Cardiology and Medical Director of the  
Preventive and Consultative Cardiology Center of Excellence at  
Cedars-Sinai Heart Institute, Los Angeles, California, USA*

*Clinical Professor of Medicine, David Geffen School of Medicine at UCLA*

*Chairman, International Academy of Cardiology*

*Cardiology Online  
CardiologyOnline.com*

**MEDIMOND**

**INTERNATIONAL PROCEEDINGS**

© Copyright 2010 by MEDIMOND s.r.l.  
Via G. Verdi 15/1, 40065 Pianoro (Bologna), Italy  
www.medimond.com • info@medimond.com

All rights reserved. No part of this publication may be reproduced,  
stored in a retrieval system, or transmitted, in any form,  
or by any means, electronic, mechanical, photocopying,  
recording or otherwise, without the prior permission,  
in writing, from the publisher.

Printed in September 2011 by Editografica • Bologna (Italy)

ISBN 978-88-7587-617-3

***monduzzi editore***

***INTERNATIONAL PROCEEDINGS DIVISION***

is a registered trademark owned by Medimond s.r.l.

*To the memory of my parents*

*Rivka and Yaacov Kimchi*

*and of my parents-in-law*

*Norma and Max Goldberg*

*To my wife, sons and my daughter-in-law*

*Becky, Eyal, Eitan and Michelle*



## **FOREWORD**

This book is composed of invited lectures and free papers presented at the 15th World Congress on Heart Disease – International Academy of Cardiology Annual Scientific Sessions 2010, held in Vancouver, Canada, July 24-27, 2010.

The volume contains contributions by leading authorities on the latest research developments in Cardiovascular Medicine, primarily in the areas of Molecular and Cellular Biology, Coronary Artery Disease, Heart Failure, Cardiac Arrhythmias and Cardiac Surgery. The information included in these articles will prove to be of great value to cardiologists and scientists involved in research and patient care.

We are indebted to the members of the scientific committees and the abstract reviewers, who provided a wealth of important suggestions during the planning phase of the Congress. To the Congress faculty and all other Congress participants, we express our thanks for the quality of their presentations and for their cooperation in submitting manuscripts in a timely fashion. Finally, we acknowledge with great appreciation Ms. Agnese Ferrari from Medimond Medical Publications, for her help in editing and expediting the publication of this book.

Asher Kimchi, M.D., FACC, FACP, FAHA, FIACS



# Index

Front page .....	III
Foreword .....	VII

## ***Molecular and cellular cardiology***

TLR4, HSP60, Inflammation and Cardiovascular Disease Knowlton, A.A., Kim, S.C., Lin, L., Chen, L., Jung, J.S. and Kim, B.S. ....	1
Myeloperoxidase: a marker and mediator of acute coronary artery disease Filep J.G. and El Kebir D. ....	7
“Pre-conditioning” in Mice Fetal Heart Affected by Maternal Malnutrition Ito T., Tanabe K., Nakamura A., Funamoto K., Aoyagi A., Chisaka H., Yaegashi N., Okamura K., Kimura Y. ....	13

## ***Vascular biology, endothelial function***

Endothelial cell injury in cardiovascular surgery the pathophysiology of vaso- motor dysfunction. Pollice P., MD, Saad E., MD, Pollice F., MD, Fabiani A., MD .....	17
Primary cilia are mechanosensory organelles in vascular tissues. Nauli, SM .....	23

## ***Diagnostic Methods***

Clinical Usefulness of Live/Real Time Three-Dimensional Transesophageal Echocardiography Nanda NC, Mundkur M .....	27
Atrial Fibrillation During Dobutamine Stress Echocardiography: Patient Cha- racteristics and Outcomes Acharya Yuba R., MD, Junu Bhattarai, MD, Jamshid Shirani, MD .....	35

Case reports of fetal bradycardia diagnosed by fetal electrocardiogram via maternal abdomen.

Aoyagi A., Kimura Y., Ito T., Chisaka C., Tanabe K., Funamoto K., Okamura K., Yaegashi N. 41

### ***Atherosclerosis***

Experimental therapy for elucidation of mechanism of diseases.

Navab KD, Vakili L, Hama S, Hough G, Chiu C, Yousefian O, Kim J ..... 45

Smoking-Related Low HDL-C Level and Regression of Coronary Atherosclerosis during Statin Therapy (from the JAPAN-ACS study)

Ando J., Hirata Y., Nagai R., Matsuzaki M. .... 49

### ***Ischemic heart disease, acute myocardial infarction, interventional cardiology***

Novel risk factors for cardiovascular disease

Barrett-Connor E. .... 53

Treatment of Stable Angina: Update 2010

Thadani U., MD ..... 57

Acute myocardial infarction in Chile before and after the Chilean health reform.

Diaz, R. .... 63

Autoantibodies to cardiac troponin-t in normal blood donor and cardiac biomarker positive cohorts.

Adamczyk, M.; Brashear, R. J.; and Mattingly, P. G. .... 67

Effect of opium addiction on nutritional patterns of patients with cardiovascular disease

Derakhshanian H, Zabihi M, Amin A, Maleki M, Saedisomeolia A ..... 71

Long-Term follow up of patients treated with paclitaxel-eluting stent with bioestable polymer versus bioresorbable polymer.

Íñigo-García L.A., Medina-Palomo C, Gil-Jiménez T, Sanz-Vázquez O, Pombo-Jiménez M, Muñoz-Bellido J.F, Chinchurreta-Capote P, Zaya-Ganforina B, Siles-Rubio JR, Ruiz-Mateas F. .... 75

### ***Cardiac remodeling and myocardial protection***

Subcellular Remodeling in Congestive Heart Failure Due to Myocardial Infarction

Dhalla N.S., Babick A.P, Müller A.L., and Elimban V. .... 81

Aging and remodeling of the renin-angiotensin system post infarction Jugdutt BI .....	87
Pleiotropic Effects of Pioglitazone Affecting Myocardial Protection Against Ischemia-Reperfusion injury Ye Yumei, MD Birnbaum Yochai, MD .....	93
Secreted frizzled related protein 2 and fibrosis during healing after reperfused myocardial infarction Jugdutt B. I. ....	97

***Dyslipoproteinemia, obesity, diabetes mellitus and metabolic syndrome***

Household food insecurity and obesity in canadian adoloeccents Bajaj A, Ramdath D. D, Moghadasian MH and Singal PK .....	101
Independent Contribution of the Hypertriglyceridemic-Waist Phenotype to the Cardiometabolic Risk in Women Méthot J, B.Pharm., Ph.D., Brisson D, Ph.D., CCRP, Gaudet D, MD, Ph.D. ....	107
Effect of diabetes mellitus on short term mortality in patients with first acute st- elevation myocardial infarction: ten years results from a hospital with no invasive facilities. Pop C, Pop L, Roman M, Dan D, Dicu D .....	113
Association of Adiponectin and the Hypertriglyceridemic-Waist Phenotype with Impaired Glucose Tolerance in Women Méthot J, B.Pharm., Ph.D., Loucif Y, DMD, Brisson D, Ph.D., CCRP, Gaudet D, MD, Ph.D. ....	119

***Arterial disease and hypertension***

Treatment of Peripheral Arterial Disease Aronow Wilbert S., MD, FACC, FAHA .....	125
Pulmonary pressure response to exercise: from physiology to pathology Bossone E., Ferrara F., Citro R., Manfredini R. ....	129
Neural mechanisms of hypertension: from the view of the central nervous system Hirooka Y .....	135
Parasympathetic Dysfunction in Treated Hypertensive Patients. Agarwal, SK, MD, Agarwal NK .....	139

**Cardiomyopathies: pathogenesis and treatment**

Is Doxorubicin-Induced Cardiomyopathy A Dystrophinopathy? Campos Erica C., O'Connell João Lucas, Prado Cibele M., Celes Mara R. N., Malvestio Lygia Mouri, Simões Marcus Vinícius; Rossi Marcos A. ....	145
A preferred time for onset of Tako-Tsubo Cardiomyopathy? Manfredini R, Manfredini F, Malagoni AM, Citro R, Eagle KA, Bossone E. ....	153

**New horizons in the management of heart failure**

Heart rate reduction and cardiovascular outcomes: is there a therapeutic relation? Borer JS .....	161
Relaxin in Acute Decompensated Heart Failure Hobbs R .....	165
Surgical Treatment of Heart Failure : current repair strategies and future directions Maltais S, Perrault LP .....	169
Pacing for Heart Failure: When to Pace, When Not to Pace Szady AD and Aranda JM Jr. ....	177
Prevalence of autoantibodies to bnp in normal donor and cardiac biomarker cohorts. Adamczyk, M.; Brashear, R. J.; and Mattingly, P. G. ....	181

**Arrhythmia, electrophysiology, sudden cardiac death**

“Voodoo” Death Revisited Samuels, M .....	185
Modification of the task force criteria for arrhythmogenic right ventricular cardiomyopathy/dysplasia (arvc/d) Marcus, Fl, Gear, K .....	199
Noninvasive risk assessment in brugada syndrome Takagi, M. ....	209
Clinical impact of image integration system for catheter ablation of persistent/permanent atrial fibrillation. Pollice F. ....	215
One-year performance of a 1.1 mm electrode spacing atrial lead in icd recipients (aster study) Seidl K., Kuck K.H., Trappe H.J., Santerelli P., Hahlweg K., Pohle F.K., Simon M., Sperzel J. ....	223

Diagnosis of unexplained cardiac arrest: role of genetic screening for channelopathies Jiménez-Jáimez Juan, Tercedor-Sánchez Luis, Álvarez-López Miguel, Sebastián Galdeano Ricardo, Santiago Diaz Pablo, Melgares-Moreno Rafael .....	229
Partially Extracted Defibrillator Coils and Pacing Leads Alter Defibrillation Thresholds Pilcher T, Stinstra J, Tate J, Saarel E, Puchalski M, Macleod R .....	235
Multifactorial QT Interval Prolongation: The Risk of Polypharmacy Digby G, Pérez Riera AR, Barros RB, de Sousa Belém L, Fong C, Methot M, Femenía F, Baranchuk A .....	241

***Pediatric cardiology and cardiac surgery, congenital heart disease***

Valve repair in rheumatic mitral valve disease. Pollice P., MD, Pollice F., MD, Saad E., MD, Fabiani A., MD .....	245
--	-----

***Valvular heart disease, diseases of the thoracic aorta, cardiac surgery***

Recent Advances in the Treatment of Abdominal Aortic Aneurysm: Role of Phototherapy Gertz SD, MD, PhD; Rubinstein C, MD; Bulut A, MD; Berlatzky Y, MD; Beeri R, MD; Gilon D, MD; Gavish LY, PhD; Harlev M, DVM; Reissman P, MD; and Gavish L., PhD .....	249
Statins in Calcific Aortic Valve Disease: From Bench to Bedside Designing Clinical Trials in Aortic Valve Disease: From Bench to Bedside Rajamannan Nalini M. MD, Moura Luis M., MD., PhD .....	259
Use of biomarkers to identify therapy targets and diagnostic markers for abdominal aortic aneurysm Golledge J, Moran CS, Clancy P, Rush C, Norman PE .....	281
The Epidemiology of Valvular Diseases in New York State: A Growing Problem. Supino PG, Borer JS and Goon AK. ....	287
Custodiol-N, a novel organ protection solution protects against myocardial and endothelial reperfusion injury after orthotopic heart transplantation Schmack B. MD, Weymann A. MD, Soos P. MD, PhD, Karck M. MD, PhD, Szabo G. MD, PhD	291
Comparison of coronary artery bypass grafting versus drug-eluting implantation. Pollice P., MD, Pollice F., MD, Saad E., MD, Fabiani A., MD .....	297
Author Index .....	303



## Author Index

- Acharya Yuba R., 35  
Adamczyk, M., 67, 181  
Agarwal NK, 139  
Agarwal, SK, 139  
Álvarez-López Miguel, 229  
Amin A, 71  
Ando J., 49  
Aoyagi A., 13, 41  
Aranda JM Jr., 177  
Aronow Wilbert S., 125  
B.Pharm., 107, 119  
Babick A.P, 81  
Bajaj A, 101  
Baranchuk A, 241  
Barrett-Connor E., 53  
Barros RB, 241  
Beeri R, 249  
Berlitzky Y, 249  
Birnbaum Yochai, 93  
Borer JS, 161, 287  
Bossone E., 129, 153  
Brashear, R. J., 67, 181  
Brisson D, 107, 119  
Bulut A, 249  
Campos Erica C., 145  
Celes Mara R. N., 145  
Chen, L, 1  
Chinchurreta-Capote P, 75  
Chisaka C., 41  
Chisaka H., 13  
Chiu C, 45  
Citro R, 129, 153  
Clancy P, 281  
Dan D, 113  
de Sousa Belém L, 241  
Derakhshanian H, 71  
Dhalla N.S., 81  
Diaz, R., 63  
Dicu D, 113  
Digby G, 241  
Eagle KA, 153  
El Kebir D., 7  
Elimban V., 81  
Fabiani A., 17, 245, 297  
Femenía F, 241  
Ferrara F., 129  
Filep J.G., 7  
Fong C, 241  
Funamoto K., 13, 41  
Gaudet D, 107, 119  
Gavish L., 249  
Gavish LY, 249  
Gear, K, 199  
Gertz SD, 249  
Gil-Jiménez T, 75  
Gilon D, 249  
Golledge J, 281  
Goon AK., 287  
Hahlweg K., 223  
Hama S, 45  
Harlev M, 249  
Hirata Y., 49  
Hirooka Y., 135  
Hobbs R, 165  
Hough G, 45  
Íñigo-García L.A., 75  
Ito T., 13, 41  
Jamshid Shirani, 35  
Jiménez-Jáimez Juan, 229  
Jugdutt B. I., 87, 97  
Jung, J.S., 1  
Junu Bhattarai, 35

- Karck M., 291  
 Kim J, 45  
 Kim, B.S., 1  
 Kim, S.C., 1  
 Kimura Y., 13, 41  
 Knowlton, A.A., 1  
 Kuck K.H., 223  
 Lin, L., 1  
 Loucif Y, 119  
 Macleod R, 235  
 Malagoni AM, 153  
 Maleki M, 71  
 Maltais S, 169  
 Malvestio Lygia Mouri, 145  
 Manfredini F, 153  
 Manfredini R, 129, 153  
 Marcus, FI, 199  
 Matsuzaki M., 49  
 Mattingly, P. G., 67, 181  
 Medina-Palomo C, 75  
 Melgares-Moreno Rafael, 229  
 Méthot J, 107, 119  
 Methot M, 241  
 Moghadasian MH, 101  
 Moran CS, 281  
 Moura Luis M., 259  
 Müller A.L., 81  
 Mundkur M, 27  
 Muñoz-Bellido J.F, 75  
 Nagai R., 49  
 Nakamura A., 13  
 Nanda NC, 27  
 Nauli, SM, 23  
 Navab KD, 45  
 Norman PE, 281  
 O'Connell João Lucas, 145  
 Okamura K., 13, 41  
 Pérez Riera AR, 241  
 Perrault LP, 169  
 Pilcher T, 235  
 Pohle F.K., 223  
 Pollice F., 17, 215, 245, 297  
 Pollice P., 17, 245, 297  
 Pombo-Jiménez M, 75  
 Pop C, 113  
 Pop L, 113  
 Prado Cibele M., 145  
 Puchalski M, 235  
 Rajamannan Nalini M., 259  
 Ramdath D. D, 101  
 Reissman P, 249  
 Roman M, 113  
 Rossi Marcos A., 145  
 Rubinstein C, 249  
 Ruiz-Mateas F., 75  
 Rush C, 281  
 Saad E., 17, 245, 297  
 Saarel E, 235  
 Saedisomeolia A, 71  
 Samuels, M, 185  
 Santerelli P., 223  
 Santiago Diaz Pablo, 229  
 Sanz-Vázquez O, 75  
 Schmack B., 291  
 Sebastián Galdeano Ricardo, 229  
 Seidl K., 223  
 Siles-Rubio JR, 75  
 Simões Marcus Vinícius, 145  
 Simon M., 223  
 Singal PK, 101  
 Soos P., 291  
 Sperzel J., 223  
 Stinstra J, 235  
 Supino PG, 287  
 Szabo G., 291  
 Szady AD, 177  
 Takagi, M., 209  
 Tanabe K., 13, 41  
 Tate J, 235  
 Tercedor-Sánchez Luis, 229  
 Thadani U., 57  
 Trappe H.J., 223  
 Vakili L, 45  
 Weymann A., 291  
 Yaegashi N., 13, 41  
 Ye Yumei, 93  
 Yousefian O, 45  
 Zabihi M, 71  
 Zaya-Ganformina B, 75