Contents

Part I  Metabolic Derangements in Diabetic Cardiomyopathy

Metabolic Alterations in Diabetic Cardiomyopathy ............................................ 3
Kimberly-Ann M. Bordun, Davinder S. Jassal, and Naranjan S. Dhalla

Metabolic and Contractile Remodelling in the Diabetic Heart: An Evolutionary Perspective ................................... 27
Vijay Sharma and John H. McNeill

Induction of Metabolic Syndrome by Excess Fructose Consumption ...... 41
Weng-Yew Wong and Lindsay Brown

Substrate Metabolism in the Diabetic Heart .................................................. 65
Arzu Onay-Besikci

Effects of Diabetes-Induced Hyperglycemia in the Heart: Biochemical and Structural Alterations ........................................ 77
Tahreem Iqbal, Philip J. Welsby, Frank C. Howarth, Keshore Bidasee, Ernest Adeghate, and Jaipaul Singh

Hyperglycemia, Oxidative Stress, and Vascular Complications: Role of Epigenetic Mechanisms ..................................................... 107
Estelle R. Simo Cheyou and Ashok K. Srivastava

A Critical Balance Between Oxidative Stress and Antioxidant Defense in Cardiovascular System Under Hyperglycemia: A Summary of Experimental Studies.................................................. 123
Murat Ayaz and Belma Turan

Aldose Reductase and Diabetic Cardiovascular Disease ............................. 143
Mariane Abdillahi and Ravichandran Ramasamy

Sex Differences and Diabetes Mellitus in Cardiovascular Function .......... 159
Semir Ozdemir, Nazmi Yaras, and Belma Turan
Part II  Cellular Mechanisms of Diabetic Cardiomyopathy

MicroRNomics of Diabetic Cardiomyopathy .................................................. 179
Paras K. Mishra and Suresh C. Tyagi

Cellular Mechanism Underlying the Misfunction of Cardiac Ionic Channels in Diabetes .................................................. 189
Mónica Gallego and Oscar Casis

Role of PPAR-δ in Diabetic Cardiomyopathy .............................................. 201
Ying-Xiao Li, Kai-Chun Cheng, and Juei-Tang Cheng

The Role of Inflammation in Type 2 Diabetes-Driven Atherosclerosis .................................................. 213
Jennifer E. Enns, Carla G. Taylor, and Peter Zahradka

Cardiovascular Autonomic Neuropathy in Diabetes .................................. 239
Takahide Arai, Masaki Ieda, and Keiichi Fukuda

Liver and Fat in Type 2 Diabetes: New Insights and Clinical Relevance ........................................................................... 249
Mukesh Nandave, Anup Ramdhave, and Ramesh K. Goyal

Roles of PKC Isoforms in Development of Diabetes-Induced Cardiovascular Complications .................................................. 269
Isil Ozakca and A.Tanju Ozcelikay

Calcium-Handling Proteins in Diabetic Cardiomyopathy .......................... 285
Vijayan Elimban, Adriana Frota P. Pinto, and Naranjan S. Dhalla

Abnormalities in ATP Production and Utilization in Diabetic Cardiomyopathy .................................................. 299
Naranjan S. Dhalla, Arthur H. Cunha-Volpato, and Yan-Jun Xu

Part III  Therapeutic Aspects of Diabetic Cardiomyopathy

The Next Generation of Diagnostic Biomarkers for Type 2 Diabetes........ 313
Samarjit Das and Tengku Ain Kamalden

PDE-5 Inhibitors in Protection of Diabetic Heart........................................ 323
Saisudha Koka and Rakesh C. Kukreja

Restoration of Angiogenesis: A Promising Therapeutic Strategy in Diabetic Cardiomyopathy .................................................. 339
Veeranjaneyulu Addepalli and Dipti Gatne
The Angiotensin-Converting Enzyme 2/Angiotensin-(1-7)/Mas Receptor Axis: A Potential Target for Treating Diabetic Cardiovascular Disease ............................................................................................................. 349
Ibrahim F. Benter, Mariam H.M. Yousif, Jasbir S. Juggi, and Saghir Akhtar

Targeting Matrix Metalloproteinase 2 and 9 for Treatment of Cardiovascular Dysfunction of Diabetes ................................................................. 359
Lokesh Kumar Bhatt and Veeranjaneyulu Addepalli

Nutraceutical Approaches in the Management of Cardiovascular Dysfunctions Associated with Diabetes Mellitus .............. 377
Saloni Daftardar, Ginpreet Kaur, and Veeranjaneyulu Addepalli

Nutritional Management of Cardiovascular Complications Caused by Diabetes ................................................................. 397
Adriana Adameova, Paramjit S. Tappia, Yan-Jun Xu, and Naranjan S. Dhalla

Index ........................................................................................................................................ 413
Diabetic Cardiomyopathy
Biochemical and Molecular Mechanisms
Turan, B.; Dhall, N.S. (Eds.)
2014, XIX, 416 p. 64 illus., 38 illus. in color., Hardcover
ISBN: 978-1-4614-9316-7