

Contents

List of Contributors	ix
Introduction	xi
1 Epidemiology of Vascular Disease in Diabetes	1
<i>Susan Laing</i>	
1.1 Introduction	1
1.2 The Role of Epidemiological Studies	1
1.3 Cohort Studies of People with Diabetes	2
1.4 Cardiovascular Disease and Diabetes	4
1.5 Mortality from Coronary Heart Disease	6
1.6 Mortality from Cerebrovascular Disease	8
1.7 Discussion	10
References	12
2 Pathogenesis of Atherosclerosis and Vascular Disease in Type 2 Diabetes	16
<i>Naveed Sattar and Alistair Cormack</i>	
2.1 Introduction	16
2.2 What is Insulin Resistance?	17
2.3 Dyslipidaemia and Type 2 Diabetes	19
2.4 Hypertension	22
2.5 Endothelial Dysfunction and Type 2 Diabetes	23
2.6 Inflammation	25
2.7 Adipokines – Adiponectin	26
2.8 Haemostatic Changes in Type 2 Diabetes	27
2.9 Hyperinsulinaemia	28
2.10 Role of Hyperglycaemia	29
2.11 Metabolic Syndrome as a Link between Insulin Resistance and CVD?	30
2.12 Effects of Anti-diabetic Drugs on Risk Factor Pathways	31
2.13 Conclusions	32
References	32
3 Coronary Heart Disease and Diabetes	37
<i>Colin Berry, Miles Fisher and John J. McMurray</i>	
3.1 Nature of Coronary Heart Disease in Diabetes	37
3.2 Presentation of CHD in Diabetes	38

3.3	Non-invasive Investigation	39
3.4	Pharmacological Treatment of CHD in People with Diabetes	40
3.5	Coronary Revascularisation in Diabetes	42
3.6	Stents for Coronary Artery Disease in Diabetes	50
3.7	Drug-eluting Stents	53
3.8	Drug Therapy and PCI in Diabetic Patients	56
3.9	Conclusions	59
	References	59
4	Diabetes and Acute Coronary Syndromes	69
	<i>Colin Berry, Miles Fisher and John J. McMurray</i>	
4.1	Introduction	69
4.2	Antiplatelet Agents	69
4.3	Thrombolysis	71
4.4	Beta-blockers	73
4.5	ACE Inhibitors	74
4.6	Angiotensin Receptor Blockers	74
4.7	Heparin	76
4.8	Glycoprotein IIb/IIIa Inhibitors	76
4.9	Revascularisation for Acute Coronary Syndromes	79
4.10	Device Therapy Post-MI	84
4.11	Management of Glycaemia	84
4.12	Conclusions	87
	References	87
5	Diabetes, Left Ventricular Systolic Dysfunction and Chronic Heart Failure	93
	<i>Michael R. MacDonald, Mark C. Petrie, Nathaniel M. Hawkins and John J. McMurray</i>	
5.1	Introduction	93
5.2	Prevalence	93
5.3	Incidence	98
5.4	Risks of Developing CHF and Diabetes	99
5.5	Diabetes and Mortality in Patients with CHF	100
5.6	Morbidity	102
5.7	Chronic Heart Failure and Abnormalities of Insulin and Glucose Metabolism	103
5.8	Why do Patients with Diabetes develop CHF?	105
5.9	Reducing the Risk of Diabetes in Patients with CHF	109
5.10	Reducing the Development of CHF in Patients with Diabetes	109
5.11	Treatment of Diabetes in Patients with CHF	110
5.12	Treatment of CHF in Patients with Diabetes	117
5.13	Conclusions	121
	References	121

6	Diabetes and Hypertension	135
	<i>Gordon T. McInnes</i>	
6.1	Introduction	135
6.2	Metabolic Syndrome	137
6.3	Risk Stratification	139
6.4	Strategies to Reduce Cardiovascular Risk	140
6.5	Strategies to Reduce Kidney Disease Risk	149
6.6	Risk of Diabetes Mellitus with Antihypertensive Drugs	156
6.7	Conclusions	160
	References	162
7	Diabetes and Stroke / Transient Ischaemic Attacks	175
	<i>Christopher S. Gray and Janice E. O'Connell</i>	
7.1	Introduction	175
7.2	Diabetes as a Risk Factor for Stroke	176
7.3	Diabetes, Post-stroke Hyperglycaemia and Outcome from Stroke	178
7.4	Hyperglycaemia and Ischaemic Cerebral Damage	181
7.5	Management of Diabetes and Hyperglycaemia following Stroke	182
7.6	Prevention of Stroke in Diabetic Patients	185
7.7	Diabetes, Cognitive Impairment and Dementia	191
7.8	Conclusions	192
	References	193
8	Diabetes and Peripheral Arterial Disease	199
	<i>Iskandar Idris and Richard Donnelly</i>	
8.1	Introduction	199
8.2	Pathogenesis	200
8.3	Clinical Features of PAD in Patients with Diabetes	205
8.4	Lower Extremity Revascularisation in Patients with Diabetes	209
8.5	Medical Therapy of PAD in Diabetes	210
8.6	Future Therapy for PAD	217
8.7	Conclusions	217
	References	218
9	Prevention of Cardiovascular Events in Diabetic Patients	223
	<i>Markku Laakso</i>	
9.1	Introduction	223
9.2	Coronary Artery Disease in Type 2 Diabetes	223
9.3	Potential and Proven Risk Factors for Atherothrombosis in Patients with Type 2 Diabetes	227
9.4	Treatment Effects of Cardiovascular Risk Factors on the Risk of CAD in Type 2 Diabetes	230
9.5	Summary	234
	Acknowledgements	235
	References	235

10 Prevention of Diabetes as a Means of Preventing Cardiovascular Disease	240
<i>Stephen J. Cleland and Jonathan Shaw</i>	
10.1 Hyperglycaemia as a Risk Factor for Cardiovascular Disease	240
10.2 Risk of Cardiovascular Disease in Pre-diabetes	243
10.3 Intervention Trials in Pre-diabetes	245
10.4 Screening for Pre-diabetes	252
10.5 Summary and Conclusions	253
References	254
11 Diabetes for Cardiologists	258
<i>David Macfarlane, Colin Perry and Miles Fisher</i>	
11.1 Introduction	258
11.2 Epidemiology of Diabetes Mellitus	258
11.3 New Diagnostic Criteria for Diabetes Mellitus	260
11.4 Metabolic Syndrome	261
11.5 Treatment of Diabetes Mellitus	264
11.6 Hypoglycaemia	266
11.7 Treatment of Type 2 Diabetes	268
11.8 Conclusions	274
References	275
Study Acronyms	280
Index	287