## Contents

List of Contributors xix  
Foreword xxiii  
Preface xxv  
Acknowledgement xxvii  

1 Clinical Pharmacology of Ageing 1  
*Arduino Mangoni, Paul Jansen and Stephen Jackson* 1  
- Epidemiology 1  
- Age-related changes in pharmacokinetics 2  
- Age-related changes in pharmacodynamics 3  
- Adverse drug reactions and drug interactions 4  
- Adherence 6  
- Polypharmacy versus appropriate prescribing 7  
- Over-the-counter medicines 7  
- Prescribing audit 8  
- Medication review 9  
- Undertreatment 9  
- References 10  

2 Dementia, Delirium, Agitation and Behavioural Problems 13  
*Catherine Bryant* 13  
- Dementia 13  
- Delirium 18  
- Agitation and behavioural problems 22  
- References 25  

3 Depression in Elderly Patients 27  
*Richard Weeks, Ross Kalucy and Jo Hill* 27  
- Introduction 27  
- Aetiology 27  
- Signs and symptoms 28  
- Diagnosis 29  
- Therapy 30  
- References 33  

4 Psychotic Illness in Elderly Patients 35  
*Ross Kalucy, Jo Hill and Richard Weeks* 35  
- Introduction 35  
- Aetiology 35  
- Symptoms and signs 37
5  Sleep Disorders in the Elderly: the Pros and Cons of Prescribing  
R. Doug McEvoy and Karin S. Nyfort-Hansen  
- Insomnia 45  
- Restless legs syndrome and periodic limb movements of sleep 48  
- Nocturnal leg cramps 50  
- REM behaviour disorder 50  
- References 51

6  Stroke  
Joseph A. Harbison and Gary A. Ford  
- Introduction 53  
- Aetiology 53  
- Modifiable risk factors for stroke 53  
- Therapy 54  
- Key points 61  
- References 61

7  Orthostatic Hypotension, Postprandial Hypotension and Syncope in Older Patients  
René W.M.M. Jansen  
- Orthostatic hypotension in older patients 63  
- Key points 66  
- Postprandial hypotension in older patients 66  
- Key points 68  
- Syncope in older patients 69  
- Key points 71  
- Guidelines 71  
- References 71

8  Parkinson’s Disease  
Gerrit Tissingh and Erik Ch. Wolters  
- Introduction 73  
- Symptoms and signs of PD 74  
- Aetiology and pathology 75  
- Diagnosis 75  
- Therapy 76  
- Key points 81  
- Links 81  
- References 81

9  Epilepsy  
John O. Willoughby, Joseph Frasca and Emma M. Whitham  
- Introduction 83  
- Aetiology 83  
- Symptoms and signs 83
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Authors</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Hypertension</td>
<td>Sanjeev Khindri and Stephen Jackson</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td></td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Aetiology</td>
<td></td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Symptoms and signs</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Diagnosis</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Investigation</td>
<td></td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>Therapy</td>
<td></td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>Clinical pharmacology of antihypertensive therapy</td>
<td></td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>Key points</td>
<td></td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Links</td>
<td></td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td></td>
<td>99</td>
</tr>
<tr>
<td>11</td>
<td>Lipid-Lowering in the Elderly Patient</td>
<td>Anthony S. Wierzbicki</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td></td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Aetiology</td>
<td></td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Symptoms and signs</td>
<td></td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>Diagnosis</td>
<td></td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>Therapy</td>
<td></td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>Statins</td>
<td></td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>Fibrates</td>
<td></td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Nicotinic acid</td>
<td></td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Ezetimibe</td>
<td></td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>Bile acid sequestrants</td>
<td></td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Omega-3 fatty acids</td>
<td></td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Guidelines</td>
<td></td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Key points</td>
<td></td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Links</td>
<td></td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td></td>
<td>109</td>
</tr>
<tr>
<td>12</td>
<td>Acute Coronary Syndrome</td>
<td>Derek Yiu and Arduino Mangoni</td>
<td>111</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td></td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>Aetiology</td>
<td></td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>Symptoms and signs</td>
<td></td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>Diagnosis</td>
<td></td>
<td>112</td>
</tr>
</tbody>
</table>
Therapy 114
Therapy scheme of the advised drugs 117
Key points 117
Guidelines 117
Acknowledgements 117
References 123

13 Heart Failure 125
*Arduino Mangoni*

Introduction 125
Epidemiology 125
Aetiology 125
Clinical presentation 127
Diagnosis 127
Therapy 128
Key points 137
Guidelines 137
Acknowledgements 137
References 137

14 Atrial Fibrillation and Other Rhythm Disturbances in the Elderly 139
*Abhay Bajpai, Irina Savelieva and A. John Camm*

Introduction 139
Atrial arrhythmias 139
The epidemiology and cost of AF 139
The mechanism of atrial tachyarrhythmias 140
Symptoms and signs 140
Diagnosis 140
Classification of AF 142
Causes of AF 142
Principles of management of AF 142
Treatment of acute onset AF 143
Suppression of paroxysms of AF 143
Strategies in persistent AF—rate versus rhythm control 145
Rate control in permanent AF 146
Risk of stroke and antithrombotic therapy in AF 148
Non-pharmacological techniques to prevent thrombus formation 150
Key points 150
References 150

15 Valvular Heart Disease 151
*Andrew T. Elder*

Introduction 151
Infective endocarditis 151
Prevention of endocarditis 152
Diagnosis and treatment of endocarditis 152
Prevention of thromboembolism 155
Prevention of progression of degenerative valvular disease 158
References 159
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Authors</th>
<th>Start Page</th>
<th>End Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Anticoagulants for Thrombosis and Embolism in the Elderly</td>
<td>Alexander Gallus and Dolly Daniel</td>
<td>161</td>
<td>168</td>
</tr>
<tr>
<td>17</td>
<td>Haematological Disorders</td>
<td>Bryone J. Kuss and Sabria Alhashami</td>
<td>171</td>
<td>180</td>
</tr>
<tr>
<td>18</td>
<td>COPD and Asthma in the Elderly</td>
<td>Martin Connolly and Tina L. Davies</td>
<td>183</td>
<td>197</td>
</tr>
<tr>
<td>19</td>
<td>Pneumonia in the Elderly</td>
<td>Peter A. Frith and Karin S. Nyfort-Hansen</td>
<td>199</td>
<td>206</td>
</tr>
</tbody>
</table>
20 Therapeutic Aspects of Pulmonary Tuberculosis
Paul van den Brande
Introduction 211
Pathogenesis 211
Presentation of tuberculosis in the elderly 212
Diagnosis of tuberculosis 213
Treatment of tuberculosis 213
Treatment of latent tuberculosis infection 221
Key points 222
References 222

21 Interstitial Lung Disease in the Elderly
Jeffrey Bowden
Introduction 225
Presentation of interstitial lung disease 225
Particular problems in the elderly 227
General comments with regard to therapy 229
Assessing the response to therapy 229
Drugs used in ILD 229
Treatment for specific forms of lung disease 230
Key points 234
Links 234
References 234

22 Lung Cancer in the Elderly
Jeffrey Bowden
Introduction 237
Aetiology 237
Symptoms and signs 238
Diagnosis and staging 238
Goals of therapy 239
Chemotherapeutic agents 239
Treatment protocols for NSCLC 240
Non cytotoxic agents: EGFR Inhibitors 242
Treatment of small cell carcinoma 244
Treatment of mesothelioma 244
Anti-emetic therapy 245
Key Points 245
Guidelines 246
References 246

23 Nutritional Disorders and the Older Person
Robert K. Penhall and Renuka Visvanathan
Introduction 249
Obesity and the older person 249
Nutritional frailty 252
Under-nutrition in older people 252
Screening and assessment of under-nutrition 254
The management of the under-nourished older person 257
Monitoring and change 259
Conclusion 259
References 259

24 Mouth and Dental Disorders 263
Cees de Baat and Isaac van der Waal 263
Introduction 263
Periodontal disease 263
Dental caries 264
Odontogenic infections 265
Alveolar osteitis 266
Xerostomia and hyposalivation 266
Candidiasis 267
Angular cheilitis 268
Denture stomatitis 268
Burning mouth syndrome 269
Recurrent aphthous stomatitis 270
Recurrent herpes simplex 271
Oral lichen planus 272

25 Swallowing Disorders and Medication in the Elderly 275
Eddy Dejaeger 275
Introduction 275
Normal deglutition 275
Changes with Age 276
Aetiology of deglutition disorders 277
Symptoms and signs 277
Diagnosis 277
Therapy 277
Deglutition disorders and medication 278
Key points 281
Links 281
References 281

26 Upper Gastrointestinal Disorders 283
Geoffrey S. Hebbard 283
Gastrooesophageal reflux disease 283
Oesophageal motility disorders 286
Non-cardiac chest pain 287
Oesophageal infections 287
Pill-induced oesophagitis 287
Peptic ulcer disease 288
Gastritis 292
Non-ulcer dyspepsia 292
References 293
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Gastric Emptying in Older Patients</td>
<td>295</td>
</tr>
<tr>
<td></td>
<td>Robert J. Fraser</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>295</td>
</tr>
<tr>
<td></td>
<td>Aetiology of disturbed gastric motor function in ageing</td>
<td>296</td>
</tr>
<tr>
<td></td>
<td>Symptoms and signs</td>
<td>296</td>
</tr>
<tr>
<td></td>
<td>Diagnosis</td>
<td>297</td>
</tr>
<tr>
<td></td>
<td>Therapy</td>
<td>297</td>
</tr>
<tr>
<td></td>
<td>Therapy scheme of advised drugs for gastroparesis</td>
<td>297</td>
</tr>
<tr>
<td></td>
<td>Key points</td>
<td>297</td>
</tr>
<tr>
<td></td>
<td>Guidelines</td>
<td>298</td>
</tr>
<tr>
<td></td>
<td>Effect of healthy ageing on appetite regulation—anorexia of ageing</td>
<td>298</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td>299</td>
</tr>
<tr>
<td>28</td>
<td>Lower Gastrointestinal Disorders</td>
<td>301</td>
</tr>
<tr>
<td></td>
<td>Daniel L. Worthley, Graeme P. Young and Robert J. Fraser</td>
<td>301</td>
</tr>
<tr>
<td></td>
<td>Malabsorption</td>
<td>301</td>
</tr>
<tr>
<td></td>
<td>Inflammatory bowel disease</td>
<td>304</td>
</tr>
<tr>
<td></td>
<td>Diverticulosis</td>
<td>307</td>
</tr>
<tr>
<td></td>
<td>Mesenteric ischaemia</td>
<td>309</td>
</tr>
<tr>
<td></td>
<td>Constipation</td>
<td>311</td>
</tr>
<tr>
<td></td>
<td>Diarrhoea and faecal incontinence</td>
<td>313</td>
</tr>
<tr>
<td></td>
<td>Haemorrhoids</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td>318</td>
</tr>
<tr>
<td>29</td>
<td>Abdominal Malignancies</td>
<td>321</td>
</tr>
<tr>
<td></td>
<td>Sarah Zaidi and Guy Chung-Faye</td>
<td>321</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>321</td>
</tr>
<tr>
<td></td>
<td>Epidemiology</td>
<td>321</td>
</tr>
<tr>
<td></td>
<td>Aetiology</td>
<td>324</td>
</tr>
<tr>
<td></td>
<td>Symptoms and signs</td>
<td>324</td>
</tr>
<tr>
<td></td>
<td>Therapy</td>
<td>325</td>
</tr>
<tr>
<td></td>
<td>Chemotherapy</td>
<td>327</td>
</tr>
<tr>
<td></td>
<td>Key points</td>
<td>329</td>
</tr>
<tr>
<td></td>
<td>Links</td>
<td>329</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td>329</td>
</tr>
<tr>
<td>30</td>
<td>Liver Diseases in the Elderly</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>Réme Mountfield and Alan J. Wigg</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>Physiological changes associated with ageing</td>
<td>333</td>
</tr>
<tr>
<td></td>
<td>Drug induced liver disease</td>
<td>334</td>
</tr>
<tr>
<td></td>
<td>Cirrhosis</td>
<td>335</td>
</tr>
<tr>
<td></td>
<td>Alcoholic liver disease</td>
<td>336</td>
</tr>
<tr>
<td></td>
<td>Non-alcoholic steatohepatitis (NASH)</td>
<td>337</td>
</tr>
<tr>
<td></td>
<td>Hepatitis C</td>
<td>338</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B</td>
<td>340</td>
</tr>
<tr>
<td></td>
<td>Liver transplantation</td>
<td>341</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td>341</td>
</tr>
</tbody>
</table>
31 Disorders of the lower urinary tract

Adrian Wagg

- Pathophysiology
- Incontinence subtypes
- Treatment cessation
- Assessment with a bearing on drug addition or withdrawal
- Rectal examination
- Vaginal examination
- The pharmacological treatment of urinary incontinence
- Cognition and antimuscarinics
- Bladder outflow tract obstruction
- Other pharmacological measures
- Stress urinary incontinence
- Summary
- References

32 Management of Benign Prostatic Hyperplasia in Elderly Men

Ming Liu and Gordon H. Muir

- Assessment
- Prostate specific antigen (PSA)
- Urinary retention
- Nocturnal frequency
- Treatment
- References

33 Management of Erectile Dysfunction in the Elderly

Kevin Dennison

- Introduction
- Prevalence and aetiology of ED
- Physical or psychogenic?
- Diagnosis and assessment of ed in primary care
- Treatment options
- Key points
- References

34 Benign Gynaecological Disorders

Maria Vella, James Balmforth and Linda Cardozo

- Urogenital atrophy
- Prolapse
- Traditional anatomical site prolapse classification
- Urinary incontinence
- Detrusor overactivity
- Drug therapies
- Lichen sclerosis
- Lichen planus
- References
### 35 Breast Cancer in Elderly Patients

**Bogda Koczwara**

- **Introduction** 381
- **Presentation and diagnosis—special considerations in elderly patients** 381
- **Management of breast cancer** 382
- **Management of early breast cancer** 383
- **Treatment of advanced breast cancer** 383
- **Supportive care during breast cancer treatment** 386
- **Breast cancer therapeutics in an elderly patient** 386
- **Conclusion** 386
- **Key points** 386
- **References** 390

### 36 Pharmacological Management of Endocrine Conditions in the Elderly Patient

**Nikolai Petrovsky**

- **Introduction** 391
- **Diabetes aetiology** 391
- **Diabetes symptoms and signs** 392
- **Diabetes diagnosis** 392
- **Type 2 diabetes management** 393
- **Pharmacokinetic and pharmacodynamic data of diabetes medications in elderly patients** 395
- **Clinically important drug interactions within diabetes drugs** 396
- **General adverse effects of diabetes medications in elderly patients** 396
- **Specific adverse effects and clinically-important drug interactions of diabetes drugs** 397
- **Pituitary adenomas** 397
- **Thyroid disease** 398
- **Hyperparathyroidism** 399
- **Hormone replacement** 399
- **Endocrine disease in the elderly—key points** 400
- **Further Reading** 400

### 37 Rheumatoid Arthritis, Osteoarthritis, Polymyalgia Rheumatica, Gout and Pseudogout

**E. Michael Shanahan and Stephen Hedger**

- **Rheumatoid arthritis** 403
- **Key points in rheumatoid arthritis** 408
- **Osteoarthritis** 408
- **Key points in osteoarthritis** 411
- **Polymyalgia rheumatica** 411
- **Key points in PMR** 412
- **Gout and calcium pyrophosphate disease (CPPD)** 413
- **Key points in gout and CPPD** 416
- **Links** 416
- **References** 416
38 Falls, Osteoporosis, Paget’s Disease and Osteomalacia
Harald J.J. Verhaar and Paul Jansen

Falls and osteoporosis
Paget’s disease
Osteomalacia
Key points
References

39 Drugs and Falls
Nathalie van der Velde and Tischa J.M. van der Cammen

Introduction
Pathophysiology
Fall-risk-increasing drugs
Clinical approach
Treatment: drug withdrawal
Key points
References

40 Pressure Ulcers
Rob J. van Marum

Introduction
The role of pressure in pressure ulcer development
The role of nutrition in pressure ulcer development
Risk assessment
Prevention
Local treatment
Key points
References

41 Leg Ulceration
Gabrielle M. McMullin

Introduction
Aetiology
Symptoms and signs
Diagnosis
Therapy
Key points
Guidelines
References

42 Xerosis and Asteatotic Eczema
Michael Yeung and Daniel Creamer

Xerosis
Actinic keratoses and Bowen’s disease
Bullous pemphigoid
Candidiasis
Erysipelas and cellulitis
Contact dermatitis
CONTENTS

Herpes zoster (shingles) 458
Lichen planus 459
Malignant melanoma 460
Mycosis fungoides 461
Basal cell carcinoma and squamous cell carcinoma 462
Psoriasis 463
Scabies 464
Tinea 464
Urticaria and angio-oedema 465
Venous eczema and the dependency syndrome 466

43 Age-Related Eye Diseases 469
Genevieve Larkin 469
Cataract 469
Glaucoma 472
Age related macular degeneration 476
Diabetic retinopathy 482
References 484

44 Ear Disorders 485
Wynia Derks and Gerrit Hordijk 485
Introduction 485
Hearing loss 485
Tinnitus 487
External otitis 489
Drugs causing hearing problems 490
References 491

45 Pain 493
Albert J.M. van Wijck 493
Introduction 493
Aetiology 493
Diagnosis 494
Therapy 494
Key points 496
References 498

46 Palliative Care in the Elderly 499
Alexander de Graeff and Saskia Teunissen 499
Introduction 499
Symptoms 500
Palliative care in the elderly 500
Treatment of common symptoms in elderly patients 501
References 503

Index 505