## Contents

**List of Contributors**  
  xii  

**Introduction**  
  xvii  

### SECTION 1  ASSESSMENT AND TREATMENT

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Assessment</strong></td>
<td></td>
</tr>
<tr>
<td><img src="image.jpg" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>Jose M. Menchon</td>
<td>3</td>
</tr>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Detecting OCD</td>
<td>5</td>
</tr>
<tr>
<td>Screening in clinical interview</td>
<td>7</td>
</tr>
<tr>
<td>Structured interviews</td>
<td>8</td>
</tr>
<tr>
<td>Clinical assessment of obsessive-compulsive symptoms</td>
<td>9</td>
</tr>
<tr>
<td>Yale–brown obsessive-compulsive scale</td>
<td>10</td>
</tr>
<tr>
<td>Dimensional yale–brown obsessive-compulsive scale (DY–BOCS)</td>
<td>11</td>
</tr>
<tr>
<td>Leyton obsessional inventory (LOI)</td>
<td>12</td>
</tr>
<tr>
<td>Maudsley obsessional-compulsive inventory (MOCI)</td>
<td>13</td>
</tr>
<tr>
<td>Padua inventory (PI)</td>
<td>13</td>
</tr>
<tr>
<td>Obsessive compulsive inventory (OCI)</td>
<td>14</td>
</tr>
<tr>
<td>Insight</td>
<td>14</td>
</tr>
<tr>
<td>Rating insight</td>
<td>15</td>
</tr>
<tr>
<td>Assessment of the risk of suicide</td>
<td>17</td>
</tr>
<tr>
<td>Differential diagnosis, comorbidities and related disorders</td>
<td>18</td>
</tr>
<tr>
<td>Organic brain disorders</td>
<td>19</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>20</td>
</tr>
<tr>
<td>Depression</td>
<td>20</td>
</tr>
<tr>
<td>Hypochondrias</td>
<td>20</td>
</tr>
<tr>
<td>Phobias</td>
<td>21</td>
</tr>
<tr>
<td>Tourette disorder and tic disorders</td>
<td>21</td>
</tr>
<tr>
<td>Obsessive-compulsive personality disorder (OCPD)</td>
<td>21</td>
</tr>
<tr>
<td>Body dysmorphic disorder (BDD)</td>
<td>21</td>
</tr>
<tr>
<td>Hoarding</td>
<td>22</td>
</tr>
<tr>
<td>Other disorders</td>
<td>22</td>
</tr>
<tr>
<td>Conclusions</td>
<td>22</td>
</tr>
<tr>
<td>References</td>
<td>23</td>
</tr>
</tbody>
</table>
CONTENTS

2 Pharmacotherapy of obsessive-compulsive disorder 31
   Eric H. Decloedt and Dan J. Stein
   Introduction 31
   Placebo-controlled studies of clomipramine 32
   Placebo-controlled studies of fluvoxamine 32
   Placebo-controlled studies of fluoxetine 33
   Placebo-controlled studies of paroxetine 34
   Placebo-controlled studies of sertraline 34
   Placebo-controlled studies of citalopram/escitalopram 34
   Placebo-controlled studies of venlafaxine 35
   Improving early response in OCD 35
   Special populations: children 36
   Clomipramine 36
   Fluvoxamine 36
   Fluoxetine 36
   Paroxetine 37
   Sertraline 37
   Citalopram 38
   Meta-analyses 38
   Tolerability of clomipramine and serotonin reuptake inhibitors 40
   Optimal dose of treatment 41
   Duration of treatment 42
   Refractory OCD 43
      Increased dose of SSRI 43
      Augmentation of SSRI treatment with antipsychotics 44
   Other drugs 45
   Alternative modes of administration of SSRIs 46
   Combining SSRIs 46
   Switching SSRIs 46
   Adding psychotherapy 47
   Future therapeutic options 47
   Conclusion 48
   References 48

3 Cognitive behavioural therapy in obsessive-compulsive disorder: state of the art 58
   Martin E. Franklin, Addie Goss and John S. March
   Theoretical models 58
   Treatment 60
      Exposure plus response prevention (ERP) 60
      Cognitive therapies 63
      ERP plus medication 63
   OCD protocols 64
      Assessment 64
      Adult ERP protocol 65
      Paediatric ERP protocol 67
CONTENTS

Dissemination 67
Future research 69
Summary 69
References 70

4 Electroconvulsive therapy, transcranial magnetic stimulation and deep brain stimulation in OCD 75
Rianne M. Blom, Martijn Figee, Nienke Vulink and Damiaan Denys

Introduction 75
Electroconvulsive therapy 75
Transcranial magnetic stimulation 76
Mechanism of action 77
Efficacy of rTMS in OCD 77
Side effects and safety 84
Conclusion and future directions 85
Lesioning 85
Deep brain stimulation 86
Efficacy of DBS in OCD 86
Mechanism of action of DBS in OCD 92
Side effects of DBS in OCD 92
Follow-up treatment 94
Conclusions: DBS 94
Conclusion 94
Acknowledgements 95
References 95

5 Approaches to treatment resistance 99
Stefano Pallanti, Giacomo Grassi and Andrea Cantisani
Terminological problems and operational definitions 100
Pharmacological strategies in resistant OCD 103
Switching 103
Infusion therapy 104
Cognitive behavioural therapy 105
Serotonergic agents 106
Dopaminergic agents 108
Glutamatergic agents 113
Opioids 115
Physical therapies 115
 Electroconvulsive therapy (ECT) 115
Repetitive transcranial magnetic stimulation (rTMS) 116
Deep brain stimulation (DBS) 116
Family intervention 117
Conclusions and future perspectives 117
References 118
SECTION 2 CLINICAL SPOTLIGHTS

6 Subtypes and spectrum issues

Eric Hollander, Steven Poskar and Adriel Gerard

The obsessive-compulsive spectrum

Introduction
Cluster approach
Compulsivity and impulsivity
Repetitive behaviour domain
Determining placement of proposed OCSDs using cross-cutting domains
Obsessive-compulsive spectrum nosology

OCD subtypes: understanding the heterogeneity of OCD

Dimensional approach
Associated symptom domains
Compulsive hoarding: OCPD, OCD subtype, dimension, OCSD or something else?

Conclusion
References

7 Paediatric OCD: developmental aspects and treatment considerations

Daniel A. Geller, Alyssa L. Faro, Ashley R. Brown and Hannah C. Levy

Introduction
Epidemiology
Aetiological considerations
Genetic factors
Non-genetic factors
Aetiology: summary

Clinical features
Gender and age at onset
Elaboration of phenotypic dimensions
Comorbid conditions
Neuropsychological endophenotypes
Clinical features: summary

Clinical assessment
Differential diagnosis
Normal development
Other psychiatric disorders

Treatment
Pharmacotherapy
Moderating effect of comorbid conditions
Multimodal treatment
Medication augmentation strategies in treatment resistance
Safety and tolerability
Treatment: summary
CONTENTS

Course and prognosis 179
Conclusions and future research 179
Acknowledgements 180
References 180

SECTION 3 RESEARCH SPOTLIGHTS

8 Methodological issues for clinical treatment trials in obsessive-compulsive disorder 193
Samar Reghunandanan and Naomi A. Fineberg
Introduction 193
Randomized controlled trials 194
The rationale of placebo 196
Recruitment criteria 199
Diagnosis 199
OCD dimensions and subtypes 200
The problem of comorbidity 201
Rating scales for OCD trials 203
Evaluating anxiety and depression in OCD 204
Measuring response and remission 205
Relapse prevention 207
Treatment-resistant OCD 208
Psychological treatment trials 209
Integrated pharmacological and psychological treatments in OCD 210
Health-related quality of life 211
Summary 211
References 212

9 Serotonin and beyond: a neurotransmitter perspective of OCD 220
Anat Abudy, Alzbeta Juven-Wetzler, Rachel Sonnino and Joseph Zohar
Serotonin 221
Serotonin and metabolite concentrations in OCD – 30 years later 222
Pharmacological challenge tests 224
Pharmacotherapy 225
Animal models and the role of serotonin 226
Dopamine 227
Dopamine and metabolite concentrations in humans 227
Pharmacological challenge tests 228
Pharmacotherapy 229
Animal models and the role of dopamine 231
Glutamate 232
The glutamatergic influence 232
Glutamate and metabolite concentrations in humans 232
Animal models and the role of glutamate 233
Serotonin: is it the one to blame? 233
The puzzle of antipsychotics and OCD: Is dopamine the answer? 234
So, is it a question of location? (Or . . . location, location, location?) 234
References 235

10 Brain imaging 244
  David R. Rosenberg, Phillip C. Easter and Georgia Michalopoulou
  Neuroimaging modalities 244
  Structural assessment 244
  Functional neurochemical assessment 245
  Structural assessment of OCD 246
  Total brain volume/ventricles 246
  Basal ganglia 246
  Prefrontal cortex 248
  Medial temporal-limbic cortex 252
  Pituitary 253
  Supramarginal gyrus 253
  White matter 254
  Functional neuroimaging studies of OCD 255
  Neurochemistry 258
    Serotonin 258
    N-acetyl-aspartate 258
    Choline 259
    Creatine/phosphocreatine 262
    Glutamate 262
  Conclusion 266
Acknowledgements 267
References 268

11 The genetics of obsessive-compulsive disorder: current status 277
  David L. Pauls
  Introduction 277
  Twin studies 277
  Family studies 279
    Family history studies 280
    Family interview studies 280
  Segregation analyses 284
  Candidate gene studies 285
  Genetic linkage studies 289
  Future work 291
Acknowledgements 292
References 292

12 Neurocognitive angle: the search for endophenotypes 300
  Samuel R. Chamberlain and Lara Menzies
  Introduction 300
  Heritability of OCD 301
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The concept of an endophenotype</td>
<td>302</td>
</tr>
<tr>
<td>Applying the endophenotype construct to OCD</td>
<td>305</td>
</tr>
<tr>
<td>Domains of interest in hierarchical modelling of OCD</td>
<td>307</td>
</tr>
<tr>
<td>Cognition</td>
<td>307</td>
</tr>
<tr>
<td>Neuroimaging</td>
<td>308</td>
</tr>
<tr>
<td>Searching for endophenotypes of OCD</td>
<td>311</td>
</tr>
<tr>
<td>Cognition</td>
<td>311</td>
</tr>
<tr>
<td>Neuroimaging</td>
<td>313</td>
</tr>
<tr>
<td>Other potential endophenotypes</td>
<td>316</td>
</tr>
<tr>
<td>Summary</td>
<td>317</td>
</tr>
<tr>
<td>Acknowledgements and disclosures</td>
<td>319</td>
</tr>
<tr>
<td>References</td>
<td>320</td>
</tr>
<tr>
<td>13 Conclusion and future directions</td>
<td>327</td>
</tr>
<tr>
<td>References</td>
<td>329</td>
</tr>
<tr>
<td><strong>Index</strong></td>
<td>331</td>
</tr>
</tbody>
</table>