

Index

AACAP. See American Academy of Child and Adolescent Psychiatry AAN. See American Academy of Neurology affective disorders, 20, 137, 144-145 alpha-2 adrenergic medications for behavioural comorbidities of Tourette syndrome, 6-7, 143, 144 Clonidine, 88-93, 129-130, 131, 132-134, 138, 139, 140, 141, 143, 144, 146-147 Guanfacine, 93-98, 132-134, 138, 139, 140, 141, 143, 144 American Academy of Child and Adolescent Psychiatry (AACAP), Practice Parameter, 134 - 137American Academy of Neurology (AAN), 140-145 antidopaminergic medications for behavioural comorbidities of Tourette syndrome, 6-7 first generation Fluphenazine, 37–42 Haloperidol, 4, 43-49, 129, 130, 131, 140, 141, 143-144 Pimozide, 49-54, 55, 129, 130, 131, 140, 141, 143-144 historical introduction of, 4 patient experiences with, 5, 138 - 140receptor subtypes acted on by, 26 second generation Aripiprazole, 4, 5, 56-62, 129, 130, 131, 132-134, 140, 141, 143-144, 146-147, 148-149

Olanzapine, 62-67, 132-134 Quetiapine, 68-73, 74, 130, 131, 132-134 Risperidone, 74-81, 129, 130, 131, 132-134, 140, 141, 143-144, 146-147, 148-149 Ziprasidone, 81-87, 130, 131, 140, 141, 143-144 secondary tics induced by, 17, 18-19 anti-epileptic medications, 17, 18 - 19anxiety disorders, 20, 137, 144-145 Aripiprazole adverse effects of, 57, 58-59 behavioural neurology of, cautions for use of, 57, 58 clinical indications of, 57 dose titration of, 57 guidelines on treatment of tics with, 61, 129, 130, 131, 132-134, 140, 141, 143-144, 146-147, 148-149 historical introduction of, 4 interactions of, 59-60 overall rating/summary of efficacy and tolerability of, 62 patient experiences with, 5, 138-140 pharmacological properties of, 56 preparations of, 56, 57 special population recommendations for, 60 Ascher, Eduard, 2-4 athetosis, 19 attention-deficit hyperactivity disorder, 6-7, 16, 21, 137, 143, 144 autism spectrum disorders, 17-18, 22

basal ganglia circuits, 25 behavioral interventions, 136 behavioural co-morbidities, 6-8, 16, 20-22, 136, 137, 143, 144-145 brain injury, 17, 18 breastfeeding. See pregnancy and breastfeeding C&A-GTS-QOL. See Gilles de la Tourette Syndrome-Quality of Life Scale Canada, pharmacotherapy guidelines published in, 131-134 central nervous system stimulants, 17, 18-19 CGI scale. See Clinical Global Impression scale Charcot, Jean-Martin, 1-2, 3 chorea, 19 chromosomal abnormalities, 17-18 Claudius, 1 clinical characteristics, tics, 9-14, 15Clinical Global Impression (CGI) scale, 32 clinical judgement, 127 Clonidine adverse effects of, 90 behavioural neurology of, 92 cautions for use of, 89 clinical indications of, 89 dose titration of, 89 guidelines on treatment of tics with, 92, 129-130, 131, 132-134, 138, 139, 140, 141, 143, 144, 146-147 interactions of, 91 overall rating/summary of efficacy and tolerability of, 93 pharmacological properties of, 88 preparations of, 88

187



188

Index

Clonidine (cont.) special population ESSTS. See European Society special population recommendations for the Study of recommendations Tourette Syndrome for, 41 for, 91 Freud, Sigmund, 2-4 Europe, pharmacotherapy communication, diagnosis, guidelines published in 24 - 25expert survey and consensus genetics, tics, 16-17 complex tics, 9, 10-13 Gilles de la Tourette, Georges, based, 146-147 compulsive tics, 20-21 systematic literature review 1-2, 3coprolalia, 1, 2-4, 9, 10 and meta-analysis Gilles de la Tourette copropraxia, 9, 10 based, 129-131 Syndrome-Quality of cortico-striato-thalamo-Life Scale (GTS-QOL, European Society for the Study cortical circuits, 25 C&A-GTS-QOL), of Tourette Syndrome 35-36 (ESSTS), 129-131, da Vinci, Leonardo, 1 146 - 147Guanfacine adverse effects of, 95-96 Dampierre, Marquise de, evidence based medicine, 127-128. See also behavioural neurology of, 97 DCI. See Tourette Syndrome systematic literature cautions for use of, 94, 95 Diagnostic Confidence clinical indications of, 94 review and metadose titration of, 94 Index analysis developmental stuttering, expert survey and consensus, guidelines on treatment of 17 - 18pharmacotherapy tics with, 98, 132-134, Diagnostic and Statistical 138, 139, 140, 141, guidelines based on Manual (DSM-5), 143, 144 Europe and UK (2012), 14-16, 20 $\bar{1}46 - 147$ interactions of, 96-97 diagnostic criteria of tic overall rating/summary of Japan (2019), 147-149 disorders, 14-16 efficacy and tolerability disruptive behaviour disorder, family 20, 137, 144-145 pharmacological properties diagnosis communication dopaminergic with, 24-25 of, 93 neurotransmission, preparations of, 94 natural history information special population for, 142 dose titrations psychoeducation for, 24-25, recommendations Aripiprazole, 57 for, 97 136, 142 Clonidine, 89 Feindel, Eugene, 2-4 guidelines on Fluphenazine, 38 Ferenczi, Sándor, 2-4 pharmacotherapy alpha-2 adrenergic Guanfacine, 94 first-generation Haloperidol, 44 medications antidopaminergic Metoclopramide, 100 medications. See Clonidine, 92, 129-130, Olanzapine, 63 131, 132-134, 138, 139, antidopaminergic Pimozide, 50 140, 141, 143, 144, medications Quetiapine, 68-69 Fluphenazine 146-147 Risperidone, 75 Guanfacine, 98, 132-134, adverse effects of, 39-40 Sulpiride, 104 behavioural neurology of, 138, 139, 140, 141, Tetrabenazine, 110 143, 144 cautions for use of, 38, 39 Tiapride, 114 expert survey and consensus Topiramate, 120 clinical indications of, 38 Ziprasidone, 82 dose titration of, 38 Europe and UK (2012), DSM-5. See Diagnostic and 146 - 147guidelines on treatment of Statistical Manual tics with, 42 Japan (2019), 147-149 dystonia, 19 interactions of, 40-41 first-generation overall rating/summary of antidopaminergic echolalia, 1, 2-4, 9, 10 medications efficacy and tolerability echopraxia, 9, 10 Fluphenazine, 42 of. 42 pharmacological properties environmental factors, in tics, Haloperidol, 48-49, 129, 16 - 17130, 131, 140, 141, of, 37 Eroom's Law, 4-5 143-144 preparations of, 38



Pimozide, 54, 129, 130,

131, 140, 141, 143-144

Index

189

other tic-suppressing medications Metoclopramide, 103, 138, 139, 140, 141, 143-144 Sulpiride, 108, 129, 130, 131 Tetrabenazine, 113, 130, 131 Tiapride, 118, 129, 130, 131, 140, 141, 143-144 Topiramate, 124-125, 138, 139, 140, 141, 144 second-generation antidopaminergic medications Aripiprazole, 61, 129, 130, 131, 132-134, 140, 141, 143-144, 146-147, 148-149 Olanzapine, 67, 132-134 Quetiapine, 73, 74, 130, 131, 132-134 Risperidone, 80-81, 129, 130, 131, 132-134, 140, 141, 143-144, 146-147, 148-149 Ziprasidone, 86-87, 130, 131, 140, 141, 143-144 systematic literature review and meta-analysis based, 127-128 Canada (2012), 131-134 Europe and UK (2011), 129-131 UK (2016), 137-140 US (2013), 134-137 US (2019), 140-145 habits, 19 Haloperidol adverse effects of, 44, 45-46 behavioural neurology of, 48 cautions for use of, 44, 45 clinical indications of, 44 dose titration of, 44 guidelines on treatment of tics with, 48-49, 129, 130, 131, 140, 141, 143-144 historical introduction of, 4 interactions of, 47 overall rating/summary of efficacy and tolerability of. 49

pharmacological properties preparations of, 43-44 special population recommendations for, 47, 48 health-related quality of life co-morbidity impact on, 6-8, 20rating scales for, 30, 35-36 hepatic and renal impairment Aripiprazole use in patients with, 60 Clonidine use in patients with, 91 Fluphenazine use in patients with, 41 Guanfacine use in patients with, 97 Haloperidol use in patients with, 47 Metoclopramide use in patients with, 102 Olanzapine use in patients with, 65, 66 Pimozide use in patients with, 52, 53 Quetiapine use in patients with, 73 Risperidone use in patients with, 79, 80 Sulpiride use in patients with, 107 Tetrabenazine use in patients with, 112 Tiapride use in patients with, 117 Topiramate use in patients with, 123 Ziprasidone use in patients with, 83, 86 history taking, 22-24 Howard, Tim, 5 Hughlings-Jackson, John, 1–2 Huntington disease, 17, 18 impulsive tics, 21 Individualized PUTS (I-PUTS), 34-35 Itard, Jean, 1-2 Japan, pharmacotherapy

guidelines published in,

147 - 149

Levodopa, 17, 18-19

Mahler, Margaret, 2–4 Malleus Maleficarum, 1 Meige, Henri, 2-4 meta-analysis. See systematic literature review and meta-analysis Methylphenidate, 18-19 Metoclopramide adverse effects of, 101 behavioural neurology of, 103 cautions for use of, 100 clinical indications of, 100 dose titration of, 100 guidelines on treatment of tics with, 103, 138, 139, 140, 141, 143-144 interactions of, 102 overall rating/summary of efficacy and tolerability of, 103, 104 pharmacological properties of, 99 preparations of, 99, 100 special population recommendations for, 102 Motor Tic, Obsessions and Compulsions, Vocal Tic **Evaluation Survey** (MOVES), 29-31 motor tics, 9, 10-12, 13-14 Movement Disorder Society, 20 movement disorders psychogenic, 17, 19 tic differential diagnosis from, 19 MOVES. See Motor Tic, Obsessions and Compulsions, Vocal Tic **Evaluation Survey** myoclonus, 19 neuroacanthocytosis, 17, 18

neurodeanthocytosis, 17, 18
neurochemical systems, in
pathophysiology of
Tourette syndrome, 26
neurodegeneration with brain
iron accumulation,
17, 18
neurodegenerative diseases,
secondary tics in, 17, 18
neurodevelopmental disorders,
secondary tics in, 17–18
neurological co-morbidities,
20



190

Index

rational approach to, 7-8, obsessive-compulsive disorder, psychiatric co-morbidities, 26-27 6-7, 16, 20-21, 137, 6-8, 16, 20-22, 136, 137, receptor subtypes acted on 143, 144-145 by, 26 psychoanalytic theories of Olanzapine reference selection for, 6, 7 adverse effects of, 63, 64-65 tics, 2-4 behavioural neurology of, tics induced by, 17, 18-19 psychoeducation, 24-25, phonic tics, 9, 12-14 66-67 136, 142 Pimozide cautions for use of, 63, 64 psychogenic movement adverse effects of, 51, 52 clinical indications of, 63 disorders, 17, 19 dose titration of, 63 behavioural neurology of, 54 psychometric instruments. See cautions for use of, 51 guidelines on treatment of rating scales PUTS. See Premonitory Urge tics with, 67, 132-134 clinical indications of, 50 dose titration of, 50 interactions of, 65, 66 for Tics Scales overall rating/summary of guidelines on treatment of tics with, 54, 129, 130, efficacy and tolerability quality of life. See health-131, 140, 141, 143-144 related quality of life of, 67 interactions of, 51, 53 Quetiapine pharmacological properties overall rating/summary of adverse effects of, 70-72 of, 62 preparations of, 63 behavioural neurology of, 73 efficacy and tolerability special population of, 54, 55 cautions for use of, 70 recommendations for, pharmacological properties clinical indications of, 69 of, 49, 50 65, 66 dose titration of, 68-69 other specified tic disorder, preparations of, 49, 50 guidelines on treatment of 14-16 special population tics with, 73, 74, 130, recommendations for, 131, 132-134 52, 53 paediatric autoimmune interactions of, 72 placebo effect, 128 neuropsychiatric overall rating/summary of pregnancy and breastfeeding disorders associated efficacy and tolerability with streptococcal Aripiprazole use during, 60 of, 73, 74 Clonidine use during, 91 infections (PANDAS), pharmacological properties Fluphenazine use during, 41 16-17 of, 68 palilalia, 9, 10 Guanfacine use during, 97 preparations of, 68, 69 palipraxia, 9, 10 Haloperidol use during, special population PANDAS. See paediatric 47, 48 recommendations autoimmune Metoclopramide use for, 73 neuropsychiatric during, 102 Olanzapine use during, 66 disorders associated rating scales, 28 with streptococcal Pimozide use during, 52, 53 premonitory urges, 29, Quetiapine use during, 73 infections 34 - 35pathophysiology, tics, 22-27 Risperidone use during, 80 proposed psychometric Sulpiride use during, 107 persistent motor tic disorder, battery, 28, 30 Tetrabenazine use quality of life, 29, 35-36 14 - 16persistent vocal tic disorder, during, 112 tic severity, 29-33 14 - 16Tiapride use during, 117 rational pharmacotherapy, Topiramate use during, pharmacotherapy. See also 7-8, 26-27 guidelines on 123, 124 receptors, anti-tic medication pharmacotherapy; Ziprasidone use during, effects on, 26 85, 86 renal impairment. See hepatic specific medications Premonitory Urge for Tics efficiency of research and and renal impairment development of, 4-5 Scales (PUTS), 34-35 Risperidone evidence based, 127-128 premonitory urges, 9, 19 adverse effects of, 76, 77-79 rating scales for, 30, 34-35 historical introduction of, 4 behavioural neurology of, natural history primary tic disorders, 14-16. 80 considerations in, 142 See also Tourette cautions for use of, 75, 76 syndrome patient experiences with, 5, clinical indications of, 75, 76 provisional tic disorder, 14-16 138 - 140dose titration of, 75



Index

191

guidelines on treatment of tics with, 80-81, 129, 130, 131, 132-134, 140, 141, 143-144, 146-147, 148-149 interactions of, 79 overall rating/summary of efficacy and tolerability pharmacological properties of, 74, 75 preparations of, 75 special population recommendations for, second-generation antidopaminergic medications. See antidopaminergic medications secondary tic disorders, 17-19 Shapiro, Arthur and Elaine, 4 Shapiro Tourette Syndrome Severity Scale (STSSS), 31 stereotypies, 22 stimulants, 17, 18-19 STSSS. See Shapiro Tourette Syndrome Severity Scale Sulpiride adverse effects of, 106-107 behavioural neurology of, 108 cautions for use of, 105 clinical indications of, 105, 107 dose titration of, 104 guidelines on treatment of tics with, 108, 129, 130, 131 overall rating/summary of efficacy and tolerability of, 108, 109 pharmacological properties of, 104 preparations of, 104, 105 special population recommendations for, 107 systematic literature review and meta-analysis, pharmacotherapy guidelines based on, 127-128 Canada (2012), 131-134

Europe and UK (2011), 129-131 UK (2016), 137-140 US (2013), 134-137 US (2019), 140-145 tardive dyskinesias, 17, 18-19 Tetrabenazine adverse effects of, 111 behavioural neurology of, 113 cautions for use of, 110 clinical indications of, 110 dose titration of, 110 guidelines on treatment of tics with, 113, 130, 131 interactions of, 112 overall rating/summary of efficacy and tolerability pharmacological properties of, 109 preparations of, 109, 110 special population recommendations for, 112 Tiapride adverse effects of, 115, 116 behavioural neurology of, 117 cautions for use of, 115 clinical indications of, 114, 115 dose titration of, 114 guidelines on treatment of tics with, 118, 129, 130, 131, 140, 141, 143-144 interactions of, 116, 117 overall rating/summary of efficacy and tolerability of, 118 pharmacological properties of, 114 preparations of, 114 special population recommendations for, 117 tic disorders. See also Tourette syndrome natural history of, 142 as neuropsychiatric disorders, 20 primary, 14-16 secondary, 17-19 tics

assessment and quantification of, 28 proposed psychometric battery, 28, 30 rating scales for premonitory urges, 30, 34 - 35rating scales for quality of life, 30, 35-36 rating scales for tic severity, 29-33 classification of, 9 co-morbid behavioural symptoms with, 6-8, 16, 20–22, 136, 137, 143, 144-145 co-morbid neurological symptoms with, 20 definition of, 9 evaluation and differential diagnosis of clinical characteristics, 9-14, 15 diagnostic criteria of tic disorders, 14-16 differential diagnosis of tics and co-morbid conditions, 16-22 pathophysiology and treatment approaches, evidence-based medicine for, 127-128 factors alleviating or exacerbating, 13 genetic and environmental factors in, 16-17 historical perspective on, 1-5 history taking in, 22-24 introduction of pharmacological agents in treatment of, 4 medication research and development for, 4-5 motor, 9, 10-12, 13-14 motor manifestations resembling, 19 onset of, 13-14 patient experiences with medications for, 5, 138 - 140psychoanalytic theories of, 2-4 rational pharmacotherapy for, 7-8, 26-27 severity of, 29-33



192

Index

tics (cont.) vocal, 9, 12-14 TODS. See Tourette's Disorder Scale **Topiramate** adverse effects of, 120, 121-122 behavioural neurology of, 123-124 cautions for use of, 120 clinical indications of, 120 dose titration of, 120 guidelines on treatment of tics with, 124-125, 138, 139, 140, 141, 144 interactions of, 123 overall rating/summary of efficacy and tolerability of, 125 pharmacological properties of, 118, 119 preparations of, 119 special population recommendations for, 123, 124 Tourette syndrome behavioural co-morbidities of, 6-8, 16, 20-22, 136, 137, 143, 144-145 current definition of, 1 diagnosis communication in, 24 - 25efficiency of medication research and development for, 4-5 evaluation and differential diagnosis of clinical characteristics, 9-14, 15 diagnostic criteria of tic disorders, 14-16 differential diagnosis of tics and co-morbid conditions, 16-22 pathophysiology and treatment approaches, 22 - 27

evidence based medicine for, 127-128 genetic and environmental factors in, 16-17 historical perspective on, 1-5 history taking in, 22-24 introduction of pharmacological agents in treatment of, 4 natural history of, 142 neurological co-morbidities of, 20 as neuropsychiatric disorder, 20 patient experiences with medications for, 5, 138-140 prevalence of, 13 psychoanalytic theories of, 2-4 psychoeducation for, 24-25, 136, 142 rating scales for, 28 premonitory urges, 30, 34 - 35proposed psychometric battery, 28, 30 quality of life, 30, 35-36 tic severity, 29-33 rational pharmacotherapy for, 7-8, 26-27 reference selection for, 6, 7 Tourette Syndrome Diagnostic Confidence Index (DCI), 14, 15 Tourette Syndrome-Clinical Global Impression (TS-CGI), 32 Tourette's Disorder Scale (TODS), 31-32 toxins, tics induced by, 17, 18 - 19treatment approaches, tics, 22-27. See also pharmacotherapy tremor, 19 Trousseau, Armand, 1-2

TS-CGI. See Tourette Syndrome-Clinical Global Impression UK, pharmacotherapy guidelines published in expert survey and consensus based, 146-147 systematic literature review and meta-analysis based, 129-131, 137-140 US, pharmacotherapy guidelines published in 2013, 134-137 2019, 140-145 unspecified tic disorder, 14-16 vocal tics, 9, 12-14 Wilson disease, 17, 18 Yale Global Tic Severity Scale (YGTSS), 33 Ziprasidone adverse effects of, 82, 83, 84 - 85behavioural neurology of, 86 cautions for use of, 82, 83 clinical indications of, 82, 83 dose titration of, 82 guidelines on treatment of tics with, 86-87, 130, 131, 140, 141, 143-144 interactions of, 83, 85

overall rating/summary of

pharmacological properties

of, 87

of, 81, 82

preparations of, 82

special population

83, 85, 86

efficacy and tolerability

recommendations for,