Appendix 1. Annotated Bibliography on Polypharmacy

Rena Kurs

Abstract Treatment resistance in schizophrenia and other mental disorders often challenges guideline-recommended monotherapy. Antipsychotic polypharmacy is thus increasingly encountered in clinical practice, and surveys of prescribing in psychiatric services internationally have identified the relatively frequent and consistent use of combined psychotropic medications, usually for people with established psychotic disorders. To date there are no clear cut acknowledged evidenced based clinical practice guidelines for the use of psychotropic polypharmacy. The following annotated bibliography is a collection of representative publications on this controversial subject. The articles presented were chosen based on timeliness, and generalizability. They will be of interest to clinicians, multidisciplinary caregivers, and families of patients treated with psychotropic medications. There are links to the full text of open access publications, and to abstracts of articles available for purchase or to subscribers of the specific journals. For convenience sake, the publications have been divided into the following sections: General polypharmacy reviews and guidelines, Pediatric polypharmacy, and Disease specific polypharmacy. The last section includes links to various clinical practice guidelines for psychiatric disorders.

Publications appear in descending order of year of publication

Keywords Polypharmacy • Annotated bibliography • Clinical practice guidelines • Open access publications

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M.S. Ritsner (ed.), *Polypharmacy in Psychiatry Practice, Volume I: Multiple Medication Use Strategies*, DOI 10.1007/978-94-007-5805-6,

General Polypharmacy Reviews and Guidelines

Antipsychotic Polypharmacy: Update and Guidelines for Practice
Rajiv Tandon

An evaluation of the appropriateness of the many rationales for antipsychotic combinations with a brief outline of recommendations for the role of polypharmacy in antipsychotic therapy.

http://medicaidmentalhealth.org/files/Guidelines/Antipsychotic%20Polypharmacy%20Update%20and%20Guidelines%20for%20Practice2012011708263376.pdf (Full text).

Polypharmacy with antipsychotics, antidepressants, or benzodiazepines and mortality in schizophrenia.
Tiihonen J, Suokas JT, Suvisaari JM, Haukka J, Korhonen P. *Archives of General Psychiatry. 2012 May;69(5):476–83.*

The authors investigated whether the use of benzodiazepines, antidepressants, or multiple concomitant antipsychotics is associated with increased mortality among patients with schizophrenia

http://www.ncbi.nlm.nih.gov/pubmed/22566579 (Abstract)

Antipsychotic polypharmacy: review of mechanisms, mortality and management
Julie LanganPolash Shajahan *The Psychiatrist (2010) 34: 58–62*

In this review the authors consider the reasons behind antipsychotic polypharmacy and the patterns of its use. They consider the evidence of effectiveness of combined therapy *v*. monotherapy and the rationale behind the potentially beneficial combinations that are used. The potential dangers of antipsychotic polypharmacy are also discussed and the limited research regarding switching from polypharmacy to monotherapy is reviewed. Some provisional recommendations regarding antipsychotic polypharmacy are proposed. http://pb.rcpsych.org/content/34/2/58.full (Full text).

Polypharmacy or medication washout: an old tool revisited
Hoffman DA, Schiller M, Greenblatt JM Iosifescu D

The authors discuss the role of washout, and whether it can help physicians select appropriate polypharmacy more effectively and safely, if necessary.

Neuropsychiatric Disease and Treatment 2011:7 639–648

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3215520/pdf/ndt-7-639.pdf (Full text)

Psychiatric Polypharmacy: Identifying Risks and Seeking Solutions
The Joint Commission Perspectives on Patient Safety, November 2008, Volume 8, Issue 11

Copyright 2008 Joint Commission on Accreditation of Healthcare Organization

Discusses four types of polypharmacy: same-class polypharmacy, multiclass polypharmacy, adjunctive polypharmacy, augmentation.

http://ebookbrowse.com/polypharmacy-pdf-d98995356 (Full text)

Quality Concerns in Psychotropic Prescribing: Reducing Psychotropic Polypharmacy

Reference Guide

New York State Office of Mental Health

In 2007, the NYS Office of Mental Health convened a Scientific Advisory Committee of national experts in psychopharmacology. Six workgroups (schizophrenia, depression, bipolar disorder, older adults, youth, and women) identified approximately 80 quality concerns in psychotropic prescribing that are common, costly, and measurable. This clinical module provides information on the quality domain of polypharmacy, including an overview of the evidence base and definitions of each indicator.

http://www.omh.ny.gov/omhweb/psyckes_medicaid/quality_concerns/reference_guide/polypharmacy.pdf (Full text)

A Critical Review of Atypical Antipsychotic Utilization: Comparing Monotherapy with Polypharmacy and Augmentation

S.M. Stahl, M.M. Grady *Current Medicinal Chemistry, 2004;11:313–327*

This article reviews evidence for the increasingly common means of treating schizophrenia and psychosis, with particular emphasis on polypharmacy and augmentation.

http://www.nascos.org/library_files/Atypicals%20Review.pdf (Full text).

Polypharmacy in Psychiatry

S. Nassir Ghaemi *New York, NY: Dekker; 2002, 346 pages.*

This practical reference book examines the advantages and disadvantages of polypharmacy in psychiatry, and provides up-to-date clinical guidelines on the appropriate use of combinations of pharmacological therapy in major psychiatric disorders-including multidisciplinary approaches to treatment. The book consolidates available and current material on polypharmacy and psychiatry into one comprehensive volume. Polypharmacy in Psychiatry also discusses the use of alternative and herbal medications psychosocial aspects of polypharmacy the psychology of polypharmacy cultural components of polypharmacy historical background

http://books.google.co.il/books?id=TthcnM15c0sC&printsec=frontcover&hl=iw&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false (Excerpts from google books)

Decision Making in Psychopharmacology: Pocketbook

Siegfried Kasper, Joseph Zohar, Dan J. Stein

Martin Dunitz, Oct 10, 2002–112 pages

Rather than providing treatment guidelines this book highlights the different available avenues of treatment for mental disorders. Decision Making in Psychopharmacology is intended to stimulate discussion and clear thinking about the evaluative process.

http://books.google.co.il/books/about/Decision_Making_in_Psychopharmacology_Po.html?id=cvq5lNZCI_QC&redir_esc=y

NASMHPD Medical Directors' Technical Report on Psychiatric Polypharmacy

Approved by the NASMHPD Medical Directors Council October 9, 2001, for distribution to the NASMHPD Membership

This report is the seventh in a continuing series of reports initiated by the Medical Directors Council of the National Association of State Mental Health Program Directors (NASMHPD) (Alexandria, Virginia, USA).

The purpose of this report is to review information on the use of polypharmacy, to outline guidelines for the use of polypharmacy, and to make recommendations that decrease the inappropriate use of multiple psychiatric medications in patients with psychiatric illness.

http://www.nasmhpd.org/docs/publications/archiveDocs/2001/Polypharmacy.PDF (Full text).

Polypharmacy: When is it rational?

Sheldon H. Preskorn *Journal of Practical Psychiatry and Behavioral Health, July 1995, 92–98*

Though published in 1995, this is a landmark paper in which the author discusses when it makes sense to consider using more than one medication to treat a single condition. He gives a brief history of the use of polypharmacy in psychiatry and discusses how new discoveries in psychotropic drug development are making polypharmacy an increasingly important topic. The author then presents a list of ten criteria to guide the rational use of psychotropic polypharmacy and explains each in detail with examples drawn from clinical practice.

http://www.preskorn.com/columns/9507.html (Full text).

Pediatric Polypharmacy

The definition and prevalence of pediatric psychotropic polypharmacy

Chen H, Patel A, Sherer J, Aparasu R

Psychiatric Services. 2011 Dec;62(12):1450–5.

Using increasingly stringent criteria, this study evaluated the prevalence of psychotropic polypharmacy among children on the basis of duration of overlap between two or more psychotropic medications.

http://www.ncbi.nlm.nih.gov/pubmed/22193792 (Abstract)

Antipsychotic polypharmacy in the treatment of children and adolescents in the fee-for-service component of a large state Medicaid program.

Constantine RJ, Boaz T, Tandon R.

Clinical Therapeutics 2010;32(5):949–59.

The aims of this study were to quantify and describe antipsychotic polypharmacy use among patients aged 6–12 years (children) and 13–17 years (adolescents) and to identify the characteristics of polypharmacy recipients.

http://www.ncbi.nlm.nih.gov/pubmed/20685503

Predictors of polypharmacy and off-label prescribing of psychotropic medications: A national survey of child psychiatrists
Marcia Kearns

Thesis – Master of Arts 2011, University of Missouri

Anational survey of child psychiatrists to examine typical prescribing practices for children with anxiety, depression, and disruptive behavior disorders from a social judgment theory perspective. The author examined the extent to which polypharmacy and off-label prescribing occur in routine practice and the degree to which child characteristics, child psychiatrist characteristics, and medication availability may influence these prescribing practices.

https://mospace.umsystem.edu/xmlui/bitstream/handle/10355/11178/research.pdf.pdf?sequence=3 (Full text)

National trends in child and adolescent psychotropic polypharmacy in office-based practice, 1996–2007.
Comer JS, Olfson M, Mojtabai R.

Journal of the American Academy of Child & Adolescent Psychiatry. 2010;49(10):1001–10.

Analysis of the annual data from the 1996–2007 National Ambulatory Medical Care Surveys that examined patterns and trends in multi-class psychotropic treatment within a nationally representative sample of 3466 child and adolescent visits to office-based physicians in which a psychotropic medication was prescribed. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2952543/ (Abstract)

Pediatric Psychotropic Polypharmacy
Zonfrillo MR, Penn JV, Leonard HL. *Psychiatry (Edgmont (Pa.: Township) 2005 Aug;2(8):14-9.*

A literature review of relevant articles pertaining to polypharmacy using the Pub Med database from 1994 through April 2004 for pediatric populations under 18 years old.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3000211/ (Abstract)

Disease Specific Polypharmacy

Depression

Medication Augmentation after the Failure of SSRIs for Depression
Madhukar H. Trivedi, Maurizio Fava, Stephen R. Wisniewski, Michael E. Thase, Frederick Quitkin, Diane Warden, Louise Ritz, Andrew A. Nierenberg, Barry D. Lebowitz, Melanie M. Biggs, James F. Luther, Kathy Shores-Wilson,

A. John Rush, for the STAR*D Study Team *New England Journal of Medicine 2006;354:1243–52.*

This study might be considered a “real-world” trial of the augmentation of an SSRI—citalopram—with sustained-release bupropion or buspirone after a consistent, well-implemented trial of citalopram was performed. Remission rates in this trial were similar to thosefound in most previous uncontrolled trials of augmentation

of SSRIs, which have typically been conducted in research clinics and have involved symptomatic volunteers with nonchronic depression and few general medical and psychiatric coexisting illnesses. Remission rates in this trial should be generalizable to most outpatients with nonpsychotic major depressive disorder who are seen in both primary and psychiatric settings and who have not had adequate benefit with the use of an SSRI alone.

http://www.nejm.org/doi/pdf/10.1056/NEJMoa052964 (Full text).

Schizophrenia

Polypharmacy with antipsychotics, antidepressants, or benzodiazepines and mortality in schizophrenia.

Tiihonen J, Suokas JT, Suvisaari JM, Haukka J, Korhonen P.

Archives of General Psychiatry. 2012;69(5):476–83.

In a registry based linkage study, the authors investigated if the use of benzodiazepines, antidepressants, or multiple concomitant antipsychotics is associated with increased mortality among patients with schizophrenia.

They linked national databases of mortality and medication prescriptions among a complete nationwide cohort of 2588 patients hospitalized in Finland for the first time with a diagnosis of schizophrenia between January 1, 2000, and December 31, 2007. Hazard ratios (HRs) were computed for all-cause mortality during the use of antipsychotics, antidepressants, or benzodiazepines in outpatient care,

http://archpsyc.jamanetwork.com/article.aspx?articleid=1151489 (Abstract)

Treatment-resistant Schizophrenia: Evidence-based Strategies.

Englisch S., Zink M. *Mens Sana Monographs 2012;10:20–32.*

The authors report on findings of frequent use of polypharmacy in treatment-refractory cases, addressing psychotic positive, negative and cognitive symptoms, treatment-emergent side effects caused by antipsychotics and comorbid depressive or obsessive-compulsive symptoms.

http://www.msmonographs.org/article.asp?issn=0973-1229;year=2012;volume=10;issue=1;spage=20;epage=32;aulast=Englisch (Full text).

Effects of polypharmacy on outcome in patients with schizophrenia in routine psychiatric treatment.

Längle G, Steinert T, Weiser P, Schepp W, Jaeger S, Pfiffner C, Frasch K, Eschweiler GW, Messer T, Croissant D, Becker T, Kilian R.

Acta Psychiatrica Scandinavica. 2012;125(5):372–81.

The authors evaluated the effects of different types of psychotropic polypharmacy on clinical outcomes and quality of life (QOL) in patients with schizophrenia and schizoaffective disorder in routine care.

http://www.ncbi.nlm.nih.gov/pubmed/22321029 (Abstract)

Antipsychotic Polypharmacy in Schizophrenia: Benefits and Risks

Barnes, Thomas R.E.; Paton, Carol *CNS Drugs: 2011; 25(5) 383–399*

This review addresses the clinical trial data and other evidence for the following pharmacological approaches: the addition of a second antipsychotic to boost therapeutic response, the use of as-required antipsychotic medication (mainly to treat disturbed behaviour), gradual cross-titration while switching from one antipsychotic to another, and augmentation of clozapine with a second antipsychotic where the illness has failed to respond adequately to an optimized trial of clozapine. Also reviewed are examples of systematic, practice-based interventions designed to reduce the prevalence of antipsychotic polypharmacy, most of which have met with only modest success.

http://adisonline.com/cnsdrugs/Abstract/2011/25050/Antipsychotic_Polypharmacy_in_Schizophrenia_.3.aspx (Abstract)

Antipsychotic polypharmacy in the treatment of schizophrenia—a health technology assessment

Baandrup L, Lublin H, Nordentoft M, Peacock L, Srensen J, Andersen SE, Glenthj B

Copenhagen: National Board of Health, Danish Centre of Health Technology Assessment (DACEHTA), 2011.

Health Technology Assessment—funded projects 2011; 11(1)

Language: English summary of the full report in Danish

Version date: January 25 2011

This health technology assessment explored how antipsychotic polypharmacy may be reduced by intervention methods and organisational changes. The report is directed at decision-makers at the level of the management board of regions and mental health centres. This report only discusses antipsychotic polypharmacy in the context of schizophrenia spectrum disorders, because the principles of treatment regarding other psychiatric disorders, e.g. bipolar affective disorder, differ substantially.

http://www.sst.dk/publ/Publ2011/MTV/Polyfarmaci/polyfarmaciMTVsummary.pdf (Full text)

Combination and augmentation strategies in treatment-resistant schizophrenia

Susanne Englisch, Mathias Zink

Drug Discovery Today: Therapeutic Strategies Vol.8 (1–2) 2011, 17–23

This review discusses risks, benefits and levels of evidence of combination strategies involving multiple psychotropic substances, with a focus on their clinical relevance.

http://www.sciencedirect.com/science/article/pii/S1740677311000313 (Abstract)

Polypharmacy in schizophrenia

Zink M, Englisch S, Meyer-Lindenberg A.

Current Opinion in Psychiatry. 2010;23(2):103–11.

This review summarizes the current state of evidence of combined antipsychotic treatment strategies and the augmentation of antipsychotics with mood stabilizers,

antidepressants and experimental substances. http://www.ncbi.nlm.nih.gov/pubmed?term=Curr%20Opin%20Psychiatry%20AND%20Polypharmacy%20in%20schizophrenia.%20AND%20Zink%20M (Abstract)

Antipsychotic combinations vs monotherapy in schizophrenia: a meta-analysis of randomized controlled trials.
Correll CU, Rummel-Kluge C, Corves C, Kane JM, Leucht S.
Schizophrenia Bulletin 2009 Mar;35(2):443–57.

This paper reports on the evaluation of therapeutic and adverse effects of antipsychotic cotreatment vs monotherapy in schizophrenia, based on Cochrane Schizophrenia Group register and hand searches of relevant journals/conference proceedings. Study Selection included randomized controlled trials comparing antipsychotic monotherapy to cotreatment with a second antipsychotic. The authors concluded that in certain clinical situations, antipsychotic cotreatment may be superior to monotherapy. However, the database is subject to possible publication bias and was too heterogeneous to derive firm clinical recommendations, underscoring the need for future research.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2659301/pdf/sbn018.pdf (Full text)

Antipsychotic monotherapy and polypharmacy in the naturalistic treatment of schizophrenia with atypical antipsychotics
Douglas Faries, Haya Ascher-Svanum, Baojin Zhu, Christoph Correll, John Kane
BMC Psychiatry 2005, 5:26 doi:10.1186/1471-244X-5-26

This study assessed the annual rate and duration of antipsychotic monotherapy and its inverse, antipsychotic polypharmacy, among schizophrenia patients initiated on commonly used atypical antipsychotic medications. The authors concluded that despite guidelines recommending the use of polypharmacy only as a last resort, the use of antipsychotic polypharmacy for prolonged periods is very common during the treatment of schizophrenia patients in usual care settings. Reasons for and the impact of the predominant use of polypharmacy will require further study.

http://www.biomedcentral.com/1471-244X/5/26 (Full text).

Validation of Polypharmacy Process Measures in Inpatient Schizophrenia Care
Birgit Janssen, Stefan Weinmann, Mathias Berger, Wolfgang Qaebel *Schizophrenia Bulletin,* Vol. 30, No. 4, 2004 1023–1033

As part of a comprehensive quality management program, the authors prospectively evaluated two schizophrenia polypharmacy performance measures in a cohort of 1,075 consecutively recruited individuals with schizophrenia in seven psychiatric hospitals. The results show the strengths and limits of polypharmacy performance measures to compare clinical practice in inpatient schizophrenia care and to detect possible treatment problems.

http://schizophreniabulletin.oxfordjournals.org/content/30/4/1023.full.pdf (Full text)

Polypharmacy in patients with schizophrenia.
McCue RE, Waheed R, Urcuyo L. *Journal of Clinical Psychiatry. 2003 Sep;64(9):984–9.*

The objective of this report was to describe the changes in prescription practices with psychotropic medications for patients diagnosed with schizophrenia in 1995 and 2000. No patients were discharged on treatment with more than 1 antipsychotic in 1995, whereas in 2000, 15.9 % of patients were. Results of increased used of polypharmacy are discussed.

http://www.ncbi.nlm.nih.gov/pubmed/14628972 (Abstract)

General Practice Guidelines

Handbook of Schizophrenia Spectrum Disorders, Volume III

Therapeutic Approaches, Comorbidity, and Outcomes
Michael S. Ritsner (Editor), Springer, 2011, 462 p.

This collection of monographs by eminent investigators reviews recent research regarding the origins, onset, course, and outcome of schizophrenia spectrum disorders. The book provides an up-to-date overview of the rapid advances made in the clinical and basic science studies supporting our understanding of the relationship between cerebral processes and clinical, cognitive and other presentations of the schizophrenia spectrum disorders. In addition, this book aims to monitor important research developments, relevant to the treatment and rehabilitation of patients.

http://www.springer.com/biomed/neuroscience/book/978-94-007-0833-4

Royal Australian and New Zealand College of Psychiatrists Clinical Practice Guidelines

The Australian and New Zealand versions of RANZCP's Consumer and Carer Clinical Practice Guidelines are free of charge to download, using the links on the webpage. These booklets are a valuable resource to support consumers, their carers, families and friends in learning more about mental illness and the treatments that are available.

The RANZCP has developed Clinical Practice Guidelines (CPGs) to provide mental health practitioners, consumers, and carers with evidence-based information about particular mental illnesses and appropriate treatment options.Available guidelines: anorexia nervosa, bipolar disorder, deliberate self harm, depression, panic disorder and agoraphobia, schizophrena.

http://www.ranzcp.org/Publications/Clinical-Practice-Guidelines.aspx

National Institute for Health and Clinical Excellence (NICE)

Guidelines—National Institute for Health and Clinical Excellence—Links to guidelines in psychiatry

http://www.nice.org.uk/Search.do?searchText=psychiatry&newsearch=true&x=17&y=12&page=2#/search/?reload

Borderline personality disorder Borderline personality disorder: treatment and management

NICE clinical guideline 78 Developed by the National Collaborating Centre for Mental Health

Issue date: January 2009
http://www.nice.org.uk/nicemedia/live/12125/42900/42900.pdf

Generalised anxiety disorder and panic disorder (with or without agoraphobia) in adults

Management in primary, secondary and community care
Issue date: January 2011
http://www.nice.org.uk/nicemedia/live/13314/52599/52599.pdf

Schizophrenia

Core interventions in the treatment and management of schizophrenia in adults in primary and secondary care

NICE clinical guideline 82
Developed by the National Collaborating Centre for Mental Health, National Institute for Health and Clinical Excellence
http://www.nice.org.uk/nicemedia/live/11786/43608/43608.pdf

APA Practice Guidelines

http://www.psych.org/practice/clinical-practice-guidelines
American Psychiatric Association Clinical Practice Guidelines provide evidenced—based recommendations for the assessment and treatment of psychiatric disorders. The guidelines are published on PsychiatryOnline. Below are direct links to guidelines for some of the major psychiatric disorders.

Schizophrenia

Guideline Watch (September 2009): Practice guideline for the treatment of patients with schizophrenia

Dixon L, Perkins D, Calmes C.
The original guideline was published in February 2004. The November 2009 Guideline Watch associated with this guideline provides additional information that has become available since publication of the guideline, but it is not a formal update of the guideline.
http://psychiatryonline.org/data/Books/prac/Schizophrenia_Guideline%20Watch.pdf

Major Depressive Disorder

Practice guideline for the treatment of patients with major depressive disorder, Third Edition
Gelenberg AJ, Freeman MP, Markowitz JC, Rosenbaum JF, Thase ME, Trivedi MH, Van Rhoads, RX
American Psychiatric Association (APA). Practice guideline for the treatment of patients with major depressive disorder. 3rd ed. Arlington (VA): American Psychiatric Association (APA); 2010 Oct. 152 p. (1170 references)
http://psychiatryonline.org/content.aspx?bookid=28&sectionid=1667485

Guideline Watch: Practice Guideline for the Treatment of Patients With Bipolar Disorder, 2nd Edition

Robert M. A. Hirschfeld

APA's *Practice Guideline for the Treatment of Patients With Bipolar Disorder,* 2nd Edition, was published in April 2002 (1). Since that time, a number of controlled treatment studies on aspects of bipolar disorder have been completed and published. This guideline watch briefly reviews the most important of the studies. The majority of the studies were industry supported.

http://psychiatryonline.org/data/Books/prac/Bipolar.watch.pdf

Practice guideline for theTreatment of Patients With Obsessive-Compulsive Disorder

Koran, LM, Hanna GL, Hollander E, Nestadt G, Simpson HB.

This practice guideline was approved in October 2006 and published in July 2007

http://psychiatryonline.org/data/Books/prac/OCDPracticeGuidelineFinal05-04-07.pdf

U.S. Department of Health & Human Services, Agency for Healthcare Research and Quality

National Guideline Clearinghouse—Guidelines for Mental Disorders

Includes 292 links to clinical practice guidelines from around the globe, for various mental disorders

http://guideline.gov/browse/by-topic-detail.aspx?id=1180&ct=1

Appendix 2. List of Psychotropic Medications

Rena Kurs

Abstract The following is a list of psychotropic medications arranged in alphabetical order, by generic names. The list is divided into the following subsections: Antipsychotic agents, Antidepressant Medications (also used for anxiety disorders), Mood Stabilizing and Anticonvulsant Medications, Anti-anxiety Medications, Sleep Agents

This list was compiled for the convenience of the reader. It is not intended or implied to be a substitute for professional medical or pharmacological advice. The information on psychotropic medications in this list is provided as an information resource only, and is not to be used or relied on for any diagnostic or treatment purposes. This information is not intended to be patient education, and should not be used as a substitute for professional diagnosis and treatment. Following the psychotropic drug list, there is an annotated list of internet links to sites with current psychotropic drug lists that include additional information such as dosage facts, recommended dosages/blood levels, half life, anticholinergic effects, sedation, orthostatic hypotension, sexual dysfunction, gastrointestinal effects, activation/insomnia, detailed side effects, medication management and black box warnings.

Keywords Psychotropic drugs • Generic drugs • Trade names • Brand names • Therapeutic class • Chemical ClassAbbreviations

Abbreviations

FGA	1st generation antipsychotic agent
MAOI	Monoamine oxidase inhibitor
MAOI-B	Monoamine oxidase -B inhibitor

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M.S. Ritsner (ed.), *Polypharmacy in Psychiatry Practice, Volume I: Multiple Medication Use Strategies*, DOI 10.1007/978-94-007-5805-6,

SGA	2nd generation antipsychotic agent
SNRI	Serotonin norepinephrine reuptake inhibitor
SPARI	Selective partial agonist and reuptake inhibitor
SSRI	Selective serotonin reuptake inhibitor
TCA	Tricyclic antidepressant

Antipsychotic agents

Generic name	Trade/Brand names	Therapeutic class	Chemical class
Aripiprazole	Abilify, Abilitat, Abilify Discmeltv	SGA	Benzisoxazole derivatives
Asenapine	Saphris	SGA	Dibenzo-oxepino pyrroles
Chlorpromazine	Largactil, Contomin, Thorazine, Propaphenin, Megaphen, Chlorderazin, Chloropromazine, Aminazine, Fenactil, Clozine	FGA	Phenothiazine
Clozapine	Clozaril, Leponex, FazaClo, Clopine	SGA	Dibenzodiazepine
Fluphenazine	Anatensol, Fludecasin, Dapotum D, Fludecate	FGA	Phenothiazine antipsychotics
Haloperidol	Aloperidol, Eukystol, Aloperidin, Aloperidolo, Brotopon, Galoperidol, Halopoidol, Serenace	FGA	Phenyl-piperidinyl-butyrophenone
Iloperidone	Zomaril, Fanapt, Fanapta, Fiapta	SGA	Piperidinyl-benzisoxazole derivatives
Loxapine	Cloxazepine, Dibenzoazepine, Oxilapine, Dibenzacepin, Loxapin, Loxapac	Tricyclic antipsychotic agents has been classed as FGA and SGA	Dibenzoxazepine
Lurasidone	Latuda	SGA	Benzisothiazol derivatives.
Molindone*	Moban, Molindone, Molindone Hydrochloride Tablets	Has been classed as both FGA and SGA	Dihydroindolone compound
Olanzapine	Zyprexa, Zyprexa Zydis, Olansek, Symbyax, Zalasta, Lanzac, Zyprexa Velotab	SGA	Thienobenzodi azepine class
Paliperidone	Invega, Paliperidone	SGA	Benzisoxazole derivatives
Perphenazine	Trilafon, Perfenazine, Etaperazine, Etaperazin, Ethaperazine, Fentazin, Perphenazin, Chlorpiprazine, Thilatazin	FGA	Piperazinyl phenothiazine

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Antipsychotic agents			
Generic name	Trade/Brand names	Therapeutic class	Chemical class
Pimozide (for Tourette's syndrome)	Orap, Opiran, Neoperidole, Halomonth, Pimozidum	FGA	Diphenylbutylpi peridine
Quetiapine	Seroquel, Quetiapine fumarate	SGA	Dibenzothiazepine derivatives
Risperidone	Risperdal, Risperidal, Rispolept, Risperin, Rispolin, Sequinan, Risperdal Consta, Risperidonum, Risperdal M-Tab	SGA	Benzisoxazole derivatives
Thioridazine	Mellaril, Melleril, Meleril, Mallorol, Malloryl, Mellerets, Mellerette, Melleretten, Thioridazin, Novoridazine, Thiori	FGA	Phenothiazine
Thiothixene	Tiotixene, cis-Thiothixene, Navane, (E)-Thiothixene, Thiothixine, Navan, trans-Thiothixene	FGA	Thioxanthene derivative
Trifluoperazine	Trifluperazine, Trifluoroperazine, Triperazine, Triflurin, Trifluoperazin, Trifluoperazina, Flurazine, Stelazine, Eskazine, Jatroneuroal, Modalina Trifluoromethylperazine	FGA	Phenothiazine
Ziprasidone	Geodon, Zeldox, Zipfasidone Hydrochloride	SGA	Benzisoxazole derivatives
Antidepressant medications (also used for anxiety disorders)			
Amitriptyline	Damilen, Elavil, Triptanol, Flavyl, Lantron, Seroten, Damitriptyline, Proheptadiene, Tryptanol, Tryptomer, Tryptizol, Laroxyl, Sarotex, Lentizol, Endep, Vanatrip	TCA	Dibenzocyclo heptadiene derivative
Amoxapine	Asendin, Demolox, Amoxepine, Moxadil, Desmethylloxapin, Amoxapina, Amoxapinum, Asendis, Defanyl, Amoksian, Demolox, Asendin	TCA	Dibenzoxazepine class
Bupropion	Bupropion hydrochloride, Wellbutrin, Zyban, Wellbutrin SR, Wellbutrin XL, Amfebutamone hydrochloride	Unicyclic antidepressant	Aminoketones
Citalopram	Nitalapram, Cipram, Celexa, Citalopramum, Cytalopram, Celapram, Ciprapine, Citabax	SSRI	Racemic bicyclic phthalane derivative

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Antipsychotic agents			
Generic name	Trade/Brand names	Therapeutic class	Chemical class
Clomipramine	Clomipramine hydrochloride, Anafranil, Clomipramine HCL, Anaphranil, Chlorimipramine hydrochloride	TCA	Dibenzazepine
Desipramine	Desipramine hydrochloride, Norpramin, Pertofran, Pertofrane, Norpolake, Nortimil, DMI hydrochloride, Pertofrin, Petylyl	TCA	Dibenzazepine
Desvenlafaxine	Pristiq extended release,	SNRI	
Doxepin	Doxepine, Zonalon, Quitaxon, Doxepinum	TCA	Dibenzoxepin
Duloxetine	Cymbalta, Yentreve, Xeristar Ariclaim, Duzela	SNRI	Naphthalenes
Escitalopram	Escitalopram, Cipralex, Seroplex, Nexito, anxiset-E, Lexapro, Lexamil, Lexam, Entact, Losita, Animaxen	SSRI	Furancarbonitrile
F`luoxetine	Prozac, Fluctin, Flunirin, Fluoxeren, Sarafem, Adofen, Lovan, Equilibrane, Rowexetina, Fontex, Fluval	SSRI	Phenylpropylamines
Fluvoxamine	Luvox, Faverin, Dumyrox, Dumirox, Favoxil, Floxyfral, Maveral	SSRI	2-aminoethyl oxime ethers of aralkylketones
Imipramine	Imidobenzyle, Antideprin, Melipramine, Berkomine, Dimipressin, Melipramin, Intalpram, Nelipramin, Dynaprin	TCA	Dibenzazepines and derivatives
Imipramine pamoate	Tofranil-PM	TCA	Dibenzazepines and derivatives
Isocarboxazid	Isocarbonazid, Isocarboxazide, Benazide, Enerzer, Marplan, Isocarbossazide, Isocarboxyzid, Maraplan, Marplon	MOAI	Hydrazine
maprotiline	Dibencycladine, Deprilept, Maprotilin, Maprotylina, Ludiomil	TCA	anthracenes
Mirtazapine	Remergil, Remeron, Zispin, Remergon, Rexer, Remeron SolTab, Mepirzepine, Promyrtil, Norset	TCA	Piperazino-azepine

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Antipsychotic agents			
Generic name	Trade/Brand names	Therapeutic class	Chemical class
Nefazodone*	Dutonin, Serzone	Synthetically derived phenylpipera-zine antidepressant	Phenols and derivatives
Nortriptyline	Sensaval, Avantyl, Noritren, Pamelor, Ateben, Desitriptilina, Nortryptiline, Nortrilen, Demethylamitriptyline, Aventyl, Lumbeck	TCA	Dibenzocyclo heptenes
Paroxetine	Paxil, Seroxat, Aropax, Paxil CR, Paroxetinum, Frosinor, Motivan, Paroxetina, Paxetil	SSRI	Phenylpiperidine
Paroxetine mesylate	Pexeva	SSRI	Mesylate salt of a phenylpiperidine compound
Phenelzine	Phenelzine sulfate, Estinerval, Nardelzine, Kalgan, Nardil, Alacine, Alazine, Alazin	MAOI	Hydrazine
Protriptyline	Amimetilina, Vivactil, Protryptyline, Triptil, Novopramine, Protriptilina, Protriptylinum, Rhotrimine	TCA	Dibenzocycloheptene
Selegiline	Eldepryl, Emsam, Jumex, L-Deprenalin, Carbex, Zelapar, Selegilinum, Selegilina, Selegyline, Anipryl,	MAOI-B	Levorotatory acetylenic derivative of phenethy lamine
Sertraline	Sertraline hydrochloride, Zoloft, Gladem, Serad, Lustral, Atruline, Tresleen, Tatig	SSRI	Tametralines
tranylcypromine	Parnate, Transamine, Jatrosom, Tranylcypromine	MAOI	phenethylamine and amphetamine class
Trazodone	Desyrel, Oleptro, Beneficat, Deprax, Desirel, Molipaxin, Thombran, Trazorel, Trialodine, Trittico, and Mesyrel	SARI	Triazolopyridine
Trimipramine	Surmontil, Rhotrimine, Stangil, Trimeprimine, Sapilent, Surmontil, Surmontyl, beta-Methylimipramine, Trimeproprimin, Stangyl,	TCA	Dibenzazepines and Derivatives

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Antipsychotic agents			
Generic name	Trade/Brand names	Therapeutic class	Chemical class
Venlafaxine	Elafax, Venlafaxina, Venlafaxinum, Effexor, Efectin, VenlafaxineXR	SNRI	Phenols and derivatives
Vilazodone	Vibryd	SPARI	Carboxamide derivative
Mood stabilizing and anticonvulsant medications			
Carbamazepine	Tegretol, Carbamazepen, Finlepsin, Carbazepine, Tegretal, Neurotol, Biston, Epitol	Anticonvulsant	Dibenzazepines and Derivatives
Divalproex sodium (valproic acid)	Depakote, Epival, Valproate semisodium, Depakote ER, Sodium divalproate, Divalproate, Delepsine, Sprinkle, Valcote, Zalkote	Anticonvulsant	
Gabapentin	Neurontin, Gabapentine, Aclonium, Fanatrix, Horizant, Gabarone, Gralise, Nupentin	Anticonvulsant.	GABA analogue
Lamotrigine	Lamictal, Lamotrigine	Anticonvulsant.	Phenyltriazine
Lithium carbonate	Eskalith, Lithobid, Dilithium carbonate, Lithonate, Liskonum, Lithane, Lithotabs, Micalith, Priadel, Limas	Mood-stabilizing agent	Inorganic ions and gases
Lithium citrate (generic only)	Lithium citrate, Trilithium citrate Demalit, Litarex, Eskalith	Mood-stabilizing agent	
Oxcarbazepine	Trileptal, Oxcarbamazepine, Timox, Epilexter	Anticonvulsant and mood stabilizer	Structural derivative of carbamazepine
Topiramate	Topamax, Epitomax, Topimax, Topomax, Topina, Tipiramate	Anticonvulsant.	Sulfamate-substituted monosaccharide
Anti-anxiety medications			
Alprazolam	Xanax, Trankimazin, Cassadan, Esparon, Tafil, Xanax XR, Alpronax, Intensol, Tranquinal	Antianxiety and sedative-hypnotic	Triazolobenz odiazepine compound
Buspirone	BuSpar, Ansial, Buspirona, Buspironum, Bespar, Ansiced, Anxiron, Buspisal	Anxiolytic agent	Azaspirodec anedione
Chlordiazepoxide	Librium, Chlozepid, Elenium, Helogaphen, Ifibrium, Kalmocaps, Librelease, Librinin	Anxiolytic agent	Benzodiazepine
Clonazepam	Klonopin, Rivotril, Clonex, Paxam, Kriadex, Antelepsin, Cloazepam, Iktorivil, Klonopin, Landsen	Anxiolytic, anticonvulsant, muscle-relaxant	Benzodiazepine

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Antipsychotic agents			
Generic name	Trade/Brand names	Therapeutic class	Chemical class
Clorazepate	Tranxene, Novo-Clopate	Anxiolytic, anticonvulsant, muscle-relaxant	Benzodiazepine
Diazepam	Valium, Ansiolisina, Assival, Diazemuls, Relanium, Stesolid, Apaurin, Faustan, Seduxen, Sibazon	Anticonvulsant, anxiolytic, sedative, muscle relaxant	Benzodiazepine
Lorazepam	Ativan, Temesta, Idalprem, Tavor, Bonatranquan, Delormetazepam, Almazine	Anti-anxiety agent hypnotic, anticonvulsant, sedative	Benzodiazepine
Oxazepam	Adumbran, Tazepam, Serax, Vaben, Ansioxacepam, Droxacepam, Anxiolit, Aplakil, Astress, Drimuel	Anti- anxiety, alcohol withdrawal, and insomnia	Benzodiazepine
ADHD medications			
Amphetamine	Mydrial, Adderall, dexedrine, Dextrostat, Desoxyn, Didrex, ProCentra. Fenopromin, Vivanxe, Benzedrine, Psychedrine	CNS stimulant	Phenethylamine
Atomoxetine	Strattera, Tomoxetine, Attentin	Non stimulant SNRI	Phenylpropylamines
Dexmethyl phenidate	Focalin	CNS stimulant	
Dextroamphe tamine	Dexedrine, Dextrostat, Dexamphetamine	CNS stimulant	Phenethylamines Amphetamines
Guanfacine	Intuniv, Estulic, Tenex, Guanfacinum, Guanfacina	Centrally acting antihyperten-sive agent	Phenethylamines
Lisdexamfetamine dimesylate	Vyvanse, Lisdexamfetamine mesilate	CNS stimulant	Phenethylamines amphetamines
Methamphe tamine	Desoxyn, Desyphed, Metamfetamine, Norodin, Stimulex	CNS stimulant	Phenethylamines amphetamines
Methylphenidate	Ritalin, Concerta, Daytrana, Metadate, Methylin, Riphenidate, Ritaline, Meridil,	CNS stimulant	Adrenergic agent, dopamine uptake inhibitors, adrenergic uptake inhibitors,
Sleep agents			
Eszopiclone	Estorra, Lunesta	Hypnotic	Lactams, cyclopyrrolones
Ramelteon	Roserem	Hypnotic	Benzofurans, indanes, phenylpropylam-ines

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Antipsychotic agents			
Generic name	Trade/Brand names	Therapeutic class	Chemical class
Zaleplon	Sonata, Zalaplon	Hypnotic	Acetanilides, pyrazolopyrimidines
Zolpidem	Ambien CR, Lorex, Stilnoct, Stilnox, Sanval	Hypnotic	Phynylporpenes, imidazopyridines

*Medications discontinued in some countries

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http://www.nimh.nih.gov/health/publications/mental-health-medications/complete-index.shtml#pub11
2. PubChem Compound
The PubChem Compound Database contains validated chemical depiction information provided to describe substances in PubChem Substance. Structures stored within PubChem Compounds are pre-clustered and cross-referenced by identity and similarity groups.
http://www.ncbi.nlm.nih.gov/pccompound
3. Daily Med: Current Medication Information
DailyMed provides high quality information about marketed drugs.
Drug labeling on this Web site is the most recent submitted to the Food and Drug Administration (FDA) and currently in use.
http://dailymed.nlm.nih.gov/dailymed/
4. DrugBank: Open Data Drug and Drug Target Database
http://www.drugbank.ca/
5. BehaveNet. BehaveNet is the Web's most comprehensive encyclopedic taxonomy of psychiatric drugs (including drugs of abuse), diagnoses (including diagnostic criteria), terminology and notable people with references to associated media and other resources
http://behavenet.com/

Links to Psychotropic Drug Lists

1. **Review of Psychotropic Drugs 2012**
Includes Medication categories, brand name, generic name, dosage facts, half life, anticholinergic effect, sedation, orthostatic hypotension, sexual dysfunction, GI effects, activation/insomnia, detailed side effects Authors' disclaimer: These Medication tables are NOT exhaustive for drug categories, dosage facts, side effects, adverse effects, indications or any special instructions (comments) and should only be used to guide learning. Use a pharmacologic text, drug guide such as the Physician's Desk Reference (PDR), or package insert for more complete medication information.

http://www.dhs.state.il.us/OneNetLibrary/27896/documents/By_Division/Division%20of%20DD/HumanRights/PsychotropicDrugsList.pdf

2. **Contemporary Psychotropic Medications listed alphabetically.**
   Metro Crisis Services
   In this table, both the generic or chemical names and the U.S. brand names are listed alphabetically. Brand names used in the United States, these medications may be sold outside the U.S. under different brand names. Includes links to Medline Plus for additional information for each drug.
   http://www.metrocrisisservices.org/7-learn-more/medications/medications-listed-alphabetically
3. **National Alliance on Mental Illness, NAMI, Policy Research Institute**
   Commonly Prescribed Psychotropic Medications
   Brand names are followed by the generic in parenthesis. A second chart below provides cross-referencing by generic name.
   *Although this medication has been approved by the FDA for the treatment of other disorders, it has not been approved for this particular use. Some evidence of this medication's efficacy for such use does exist however. This type of medication use is referred to as "off label."
   Remember, always consult your doctor or pharmacist with any specific medication questions http://www.nami.org/Template.cfm?Section=Policymakers_Toolkit&Template=/ContentManagement/HTMLDisplay.cfm&ContentID=18971
4. **University of Illinois at Chicago, Department of Children and Family Services (DCFS) Psychotropic Medication List**
   Includes Generic name, trade name, recommended doses/blood levels, medication management, black box warning, FDA indication for children
   http://www.psych.uic.edu/csp/DCFS_Psychotropic_Medication.pdf
5. **National Institute of Mental Health**
   This guide describes the types of medications used to treat mental disorders, side effects of medications, directions for taking medications, and includes any FDA warnings. http://www.nimh.nih.gov/health/publications/mental-health-medications/complete-index.shtml
6. **International Narcotics Control Board. Green List (24th edition, May 2010)**
   Annex to the annual statistical report on psychotropic substances (form P). List of Psychotropic Substances under International Control
   http://www.incb.org/pdf/e/list/Green_list_ENG_2010_53991.pdf
7. **Medication Safety team, Department of Health, Australia. Psychotropic Drug List**
   Current at January 2011.
   This is a list of pyschotropic medications available in Australia.
   This table has been developed in collaboration with the Medication Safety team, Department of Health. For ease of uses, the medications are listed alphabetically, whether by generic name, or by brand name.
   http://www.fallssa.com.au/documents/hp/Drug_list_in_SA_Health_Template_V2.pdf

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Part II Polypharmacy for Other Psychiatric Conditions

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