

Psychopharmacology: An Overview

John Tanquary, M.D.

Clinical Assistant Professor

Department of Psychiatry

Upstate Medical University

Psychopharmacology Consultant

Le Moyne College

Syracuse University

Financial Disclosure Conflicts of Interest

None

Psychotropics: A growth area

- 2007 survey 23% college mental health clients were taking psychotropics before or during treatment
- 73% of counseling center directors report increased utilization of services

Five Categories of Intervention

Antidepressants: SSRIs/SNRIs, bupropion

Analeptics (stimulants)

Mood stabilizers

Anxiolytics/Hypnotics

Complementary-Alternative Medicine (CAM)

Problems with DSM-IV-TR

- DSM-IV was published in 1994 – field trials and relevant research are often 20 or more years old
- DSM-IV-TR was published in 2004, but TR means text revision, and no new data
- DSM-V is still years away
- Consider “dimensional” approaches to assessment: CCAPS-34 (integrates with Titanium), Various Beck Inventories (BDI-PC)

DSM – How relevant?

- Probably not very. Contributions from other disorders (especially substance use/abuse and withdrawal) is rarely clear!
- Ambulatory college students who meet full DSM criteria are the exceptions, not the rule in college mental health centers
- Appropriate diagnoses are usually Anxiety, Depression, Bipolar, ADHD, Dyssomnia, or Mood Disorder “Not Otherwise Specified” (NOS)

Selective Serotonin Reuptake Inhibitors may work in:

Depressive disorders: major depression, dysthymic disorder, adjustment disorder

Anxiety disorders: Generalized Anxiety Disorder (GAD), Obsessive-Compulsive Disorder (OCD), Social anxiety disorder (Social Phobia), Panic Disorder, Phobias, adjustment disorder

Eating Disorders (both Anorexia and Bulimia Nervosa)

Miscellany: Pathological Gambling, Pathological Jealousy, "PMS", irritability, pre-mature ejaculation, canine acral lick disorder, compulsive feather pulling!

SSRIs for everything?



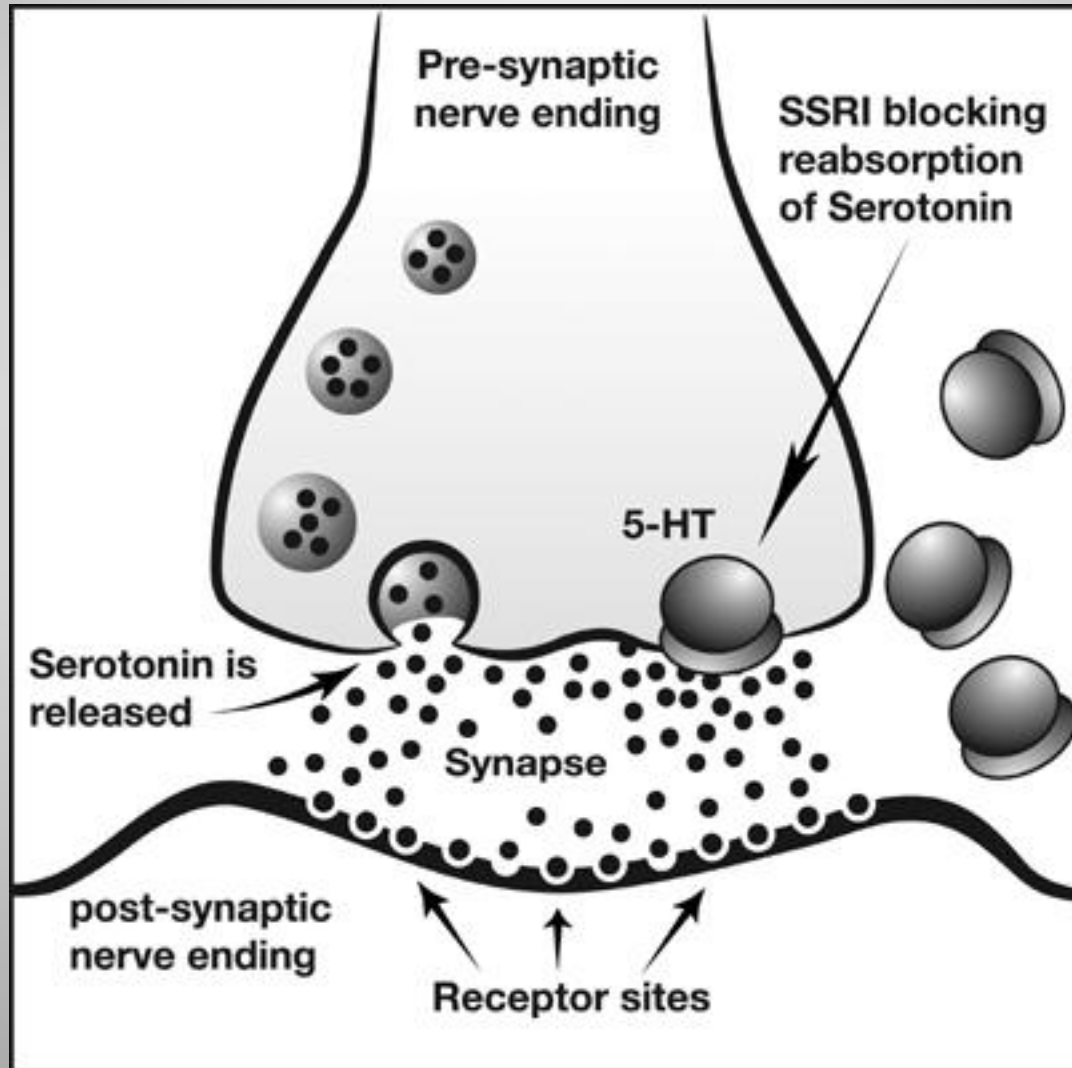
Like most veterinary students, Doreen breezes through chapter 9.

SSRIs for Nothing?

Several large, well-publicized meta-analyses have indicated that SSRIs have little benefit over placebo in treating mild to moderate depression. Major problems exist in study designs, and in the research paradigm of excluding comorbid conditions

SSRIs (in fact all antidepressants (ADs)) carry some risk of paradoxical worsening of symptoms. All ADs now have “black box” warnings warning about suicidality. The younger the age, the greater the risk: It’s as high as 3-5% in children, 2% in early adolescents, and roughly 1% in college students

Mechanism of Action?



“Real” MOA related to Neurogenesis

Multiple psychotropics increase neurogenesis via increasing levels of brain-derived neurotrophic factor (BDNF) and nerve growth factor (NGF). Gene expression is altered.

Non-pharmacologic interventions also increase NGF, BDNF and neurogenesis:

MBSR, exercise, adequate rest, proper nutrition, social supports, a sense of competency/mastery, etc.

Selective Serotonin Reuptake Inhibitors (SSRIs)

Mainstays of treatment for anxiety and depression since the Prozac revolution in 1988. Not all alike!

Paroxetine (Paxil), citalopram (Celexa) – probably more fatigue and weight gain

Sertraline (Zoloft) – more nausea, but less fatigue, and “asthenia.”

Fluvoxamine (Luvox) less sexual dysfunction?

Antidepressant withdrawal Symptoms

Rule of thumb:

- Symptoms include headache, nausea/vomiting, irritability, nightmares, anxiety, depression, and possibly suicidality
- The shorter the half-life of the SSRI/SNRI, the worse the withdrawal syndrome. Effexor, Paxil, Luvox, Pristiq are shortest.
- See Bruce Stutz's NYT article, "Self Nonmedication" (May 6, 2007) for an early Halloween fright!

Fluoxetine (Prozac)

- Longest half-life of any SSRI
- Available in 10 mg, scored tablets; students instructed to start at 5 mg and increase as tolerated in two-day, 5 mg increments
- My SSRI of choice in students who are sleeping! Always, always consider comorbidity for a “two-fer”

Bupropion (Wellbutrin)

- My antidepressant of choice in college students with no contraindications for Tx (e.g., having active eating disorder, or a h/o seizures)
- Non-sedating, little to no weight gain, little to no sexual dysfunction
- Start at 100 mg in the AM or even less; okay to break/cut sustained release (SR) tabs
- Target dose of 200 – 400 mg/day

Analeptics (stimulants)

Still the treatments of choice for ADHD!

- Vyvanse (lisdexamfetamine) – A “prodrug” of d-Amphetamine conjugated to the amino acid lysine. Not active until it goes through the liver. Longest-acting of all oral analeptics, up to 12+ hours. Only a mild abuse potential, Ses often mild. Mixed dopamine (DA) and norepinephrine (NE) effects.
- Daytrana (transdermal methylphenidate) – also very long-acting. Problems with skin irritation, need to rotate sites, etc. Pure DA effects. No NE effects.
- Decreased risk of substance abuse in treated ADHD. No evidence of “gateway” effect with stimulants.

Non-stimulants

- Strattera (atomoxetine) – market share peaked in 2003 at 13%, falling ever since to now 8%. Two black-box (FDA) warnings for suicidality and liver damage. Not first-line!
- Intuniv (guanfacine ER) – insurance companies won't pay for it; generic guanfacine instead? Good as add-on to stimulant.
- Others – modafanil (Provigil), tricyclic antidepressants, bupropion,

Mood Stabilizers

Second-generation neuroleptics: Zyprexa (olanzapine), risperidone, Abilify (aripiprazole), Seroquel (quetiapine), and Geodon (ziprasidone), etc. All can cause metabolic syndrome, weight gain, diabetes, etc.

- Geodon is the least of these bad offenders. Seroquel also not be as bad as the rest. FDA approved for depression “monotherapy”.

Antiepileptic Drugs (AEDs)

- Depakote (valproate) – useful in treating bipolar disorder complicated by migraines, anxiety, or SA. Possible polycystic ovaries
- Lamictal (lamotrigine) – useful in treating bipolar depression
- Topamax (topiramate) – second-line mood stabilizer. Good for migraines, alcoholism. Beware of “Dopamax”
- Others – Tegretol, Trileptal

Anxiolytics/Hypnotics

- Benzodiazepines are still the mainstay
- Xanax (alprazolam) may be the most abusable; Xanax XR may be less so
- Serax (oxazepam) is the least abusable
- Valium (diazepam) still works
- Non-benzo hypnotics; Ambien (zolpidem), Lunesta (eszopiclone), and Sonata (zaleplon)

Complementary/Alternative Medicine

- Most students fear the “Medical-Industrial Complex” and/or ending up on a lifetime of medication(s)
- Some find herbal Tx’s and “nutraceuticals” to be “hokey” or unlikely to work
- Always be honest about lack of quality research data, poor quality control, etc. Share that dilemma.

CAM: “Shotgun” best?

- *Rhodiola rosea* – several placebo-controlled studies for anxiety/depression (standardized to 3% rosavins and 1% salidroside). Data more impressive than *Hypericum perforatum*.
- Vitamin D – 1000-2000 IU per day
- Multivitamin – a “stress formula” with extra B complex (especially B6 in oral contraceptive users). Omega-3s (fish oil).
- Exercise, exercise, exercise!
- L-tyrosine for ADHD? Melatonin? Mg⁺²?