SPEAKER NOTES

Update on Psychotropic Drugs

Summarized by Thomas T. Thomas

Our October 22 informational program offered an overview of the world of psychopharmacology from a professional whose perspective and expertise have been praised as informative and accessible. **MacKenzie Stuart** (she/they) is a Licensed Marriage and Family Therapist who works with adults, couples, partners, and families. She is a member of core faculty at The Wright Institute in Berkeley, CA, and leads a group psychotherapy practice in Alameda, CA. She has lived experiences of mental health challenges and loves connecting with the peer community and their loved ones. Stuart is a doctoral student in counselor education and supervision at Palo Alto University. Although she is not a prescriber of medications, she teaches master's-level students about them.

Stuart opened with some definitions. Pharmacology is the study of how drugs work in the body, and psychopharmacology is the study of how drugs—generally called psychotropic—affect the nervous system and behavior. She warned that the name of a drug doesn't always indicate how it's used. Many mental health conditions are caused by, exacerbated by, or accompanied by neurochemical imbalances in the brain, and medication does help. Such medications may be used for the short or long term.

She identified the roles in the prescription of medications. First, there is the client, patient, or consumer of mental health services. If a person takes psychotropic medications, they are often in some kind of therapy. This is generally with counselor, psychologist, family therapist, or some other advisor, who generally does not have prescribing authority. And finally, there is person who can write prescriptions. In 90% of cases, this is the client's primary care physician, but it may also be a nurse practitioner or a physician's assistant—in the latter case, usually administering under emergency conditions.

"The main concept," she said, "is that neurotransmitters are chemical messengers that help brain cells talk to one another. Most medications work on making them fire more [an agonist] or less [an antagonist]."

A person taking psychotropic drugs is usually looking for an effect in days or a week. They may hope for remission in months, when the symptoms will go away. But the effect of the medication depends on the person. And there are usually side effects of the medication.

For example, anticholinergics can cause dryness in the mouth, and antihistaminics can cause drowsiness. Some medications cause extrapyramidal symptoms, like involuntary movements. And some have metabolic effects leading to weight gain. Some side effects are idiosyncratic to the patient and hard to predict. Some are an allergic reaction to either the active ingredient or the binder in the medication. Some medications are toxic in large doses. And some cause withdrawal symptoms when you stop taking them. Some side effects are just the way the drug works, and some

are the way the drug interacts with other medications—which can happen when several doctors are prescribing for the same patient.

Several resources for patients and family members to check interactions include the Neuroscience Based Nomenclature websites (https://nbn2r.com, and for children and adolescents https://pediatrics.nbn.science) as well as the Tripsit website (https://combo.tripsit.me).

For patients who have difficulty remembering when to take their medications, there pill bottle timer caps (https://timercap.com) and smartphone reminder apps (https://medisafe.com). For patients who simply don't want to take medications on a daily schedule, or for other challenges, there are long-term injectable forms of many medications.

Medications for symptoms of psychosis include Omega-3 fatty acids, which build up the myelin sheath around nerve axons, and that's also good for depression. Then there are the first- and second-generation antipsychotics (FGSs and SGAs). The FGAs include medications like Haldol/haloperidol and Thorazine/chlorpromazine. They block dopamine receptors, and this can block the positive symptoms of psychosis such as hallucinations and delusions. FGA side effects can be involuntary movements, and these medications were disfavored up until about five years ago, when better medications to control movement came off patent.

The SGAs include medications like Clozaril/clozapine, Risperdal/risperidone, and Zyprexa/olanzapine, among many others. These medications block both serotonin receptors, which in excess can make people hallucinate, and dopamine receptors. They require regular monitoring of weight, blood sugar, and lipids to avoid side effects.

Medications for depression include selective serotonin reuptake inhibitors (SSRIs), which keep the brain from mopping up amounts of serotonin it normally treats as excess, as well as serotonin norepinephrine reuptake inhibitors (SNRIs), norepinephrine reuptake inhibitors (NRIs), monoamine oxidase inhibitors (MAOIs), tricyclic/tetracyclic antidepressants, and "atypical" antidepressants such as ketamine, an NMDA receptor antagonist, and serotonin antagonist and reuptake inhibitors (SARIs). All of these medications normalize the way the neurons work. And they usually take effect in two to six weeks.

SSRIs have been around since the 1940s, and they make more serotonin available in the brain. They are a first line treatment for depression, obsessive-compulsive disorder (OCD)—because they stop a faulty brain mechanism that requires the patient to keep rechecking that something has been done—and anxiety. Examples include Prozac/fluoxetine, Lexapro/escitalopram, Luvox/fluvoxamine, Paxil/paroxetine, and Zoloft/sertraline.

For some patients, especially adolescents, SSRIs can lead to suicidal thoughts and behaviors when starting on the medication.

Medications for bipolar disorder symptoms include mood stabilizers like lithium (Eskalith) and anticonvulsants, as well as SGAs. Antidepressants can make the manic episodes worse and don't really work on bipolar depression. We really don't know why lithium works, although where it has been found in ground water people have fewer mental health problems. Note that lithium is processed in the kidneys, not the liver, and long-term use can lead to kidney damage.

Anticonvulsants slow the rate of neuronal firing and can lead to flu-like symptoms and rashes that require urgent care. Medications like Depakote/divalproex and Tegretol/carbamazepine require regular blood draws to monitor their effectiveness. Lamictal/lamotrigine does not require blood draws and can also lengthen the time between episodes.

Medications for anxiety include SSRIs, especially for panic attacks, and MAOIs. Benzodiazepines enhance the effect of GABA, an inhibitory neurotransmitter. Daily use should be limited to six months, and these drugs include warnings about tolerance and dependence, potential for misuse, and lethality. Examples include Ativan/lorazepam, Klonopin/clonazepam, Valium/diazepam, and Xanax/alprazolam.

Attention deficit/hyperactivity disorder (ADHD) is usually treated with stimulants like NRIs and medications like Adderall/amphetamine; Dexedrine, ProCentra, or Xelstrym (dextroamphetamine); Ritalin, Concerta, or Daytrana (methylphenidate); and Vyvanse/lisdexamfetamine. These stimulate the central nervous system, but they can also suppress appetite can make it difficult to sleep.

Deprescribing can be stopping a medication when it is no longer needed or decreasing the dose when it's too high. This choice to reduce medication must account for the patient's health and other effects like level of functioning, values, and preferences. Withdrawal occurs when the body has adapted to the medication and feels the effects of its sudden absence, and withdrawal can last for weeks, months, or years. The best option is to reduce the medication slowly, especially if the patient has been taking it for years. Symptoms of withdrawal can be felt in a matter of days, while a relapse or recurrence of the psychiatric symptoms can take weeks or months after stopping a psychotropic medication.