



Extended-Release Naltrexone

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Extended-release naltrexone (XR-NTX, aka Vivitrol™) is the newest FDA-approved medication for opioid and alcohol use disorders. It is the result of decades of federal and industry research into long-acting, safe, effective addiction medications. Naltrexone, a mu-opioid receptor antagonist, blocks many of the reinforcing effects of opioids (e.g., heroin, oxycodone) and alcohol, which in turn reduces illicit opioid and heavy alcohol use in treated individuals. A growing body of literature supports the feasibility and effectiveness of XR-NTX treatment among criminal justice populations.

XR-NTX and Criminal Justice Populations

Most U.S. drug courts treat opioid-addicted individuals and have access to some type of medication-assisted treatment, with 9 percent in a recent national survey reporting use of XR-NTX (Matusow et al., 2013). The feasibility and potential effectiveness of XR-NTX for alcohol-involved drug court participants has also been demonstrated. A pilot study of XR-NTX as alcohol therapy among 32 offenders in Michigan and Missouri drug courts demonstrated improved treatment and court attendance, reduced alcohol use, and fewer rearrests versus matched controls (Finigan et al., 2011). A similar case series in New Mexico showed reduced drinking and fewer instances of triggering of car ignition interlock devices among 12 repeat DUI offenders over 3 months of XR-NTX therapy (Lapham & McMillan, 2011). Considering parole

and probation populations, a recent five-site observational study showed opioid-dependent parolees on XR-NTX had less ongoing illicit opioid use and improved overall treatment outcomes as compared with treatment dropouts (Coviello et al., 2012). Pilot efforts in several jurisdictions are providing XR-NTX to opioid-dependent jail and prison detainees prior to release. Preliminary data from a New York City randomized trial indicate XR-NTX (combined with counseling during the week prior to jail release versus counseling alone) reduced rates of relapse to heroin use by more than half (38 percent versus 88 percent; Lee et al., 2013). International data assessing a related long-acting naltrexone implant also demonstrated effectiveness in a prison reentry population (Lobmaier et al., 2010).

Neurobiological Actions: How Does Naltrexone Work?

Opioid receptors in the brain's reward center are the main sites of activity for opioid molecules such as heroin and oxycodone and are important to the overall effects of alcohol. A receptor is like a button or a lock on the surface of a cell—when “pushed” or “unlocked” by another chemical, a reaction occurs, and a cascade of effects is set into motion. In the case of opioid receptors in the brain, stimulation leads to sensations of pleasure and reward. The specific type of receptors most important to alcohol and opioid addiction are mu-opioid receptors. Again, stimulating mu-opioid receptors, as heroin or alcohol do, leads to feelings of pleasure and reward (getting high or buzzed), while blocking the mu-opioid receptor prevents these effects. Addicted persons repeatedly use drugs and alcohol to get the pleasurable reaction; therefore, if this effect is blocked, they are less likely to use.

Naltrexone is a mu-opioid receptor blocker or antagonist. When naltrexone blocks mu-opioid receptors, the pleasurable and rewarding effects of opioids and alcohol are greatly diminished or unavailable. A patient on a usual dose of naltrexone can use heroin or alcohol but will usually report not feeling any heroin effects or high or not liking the taste of alcohol. Persons maintained on naltrexone have a very low risk of continued illegal opioid use and are less likely to drink alcohol heavily compared to placebo (Anton et al., 2006; Garbutt et al., 2005; Krupitsky et al., 2011). Of great importance, persons treated with naltrexone are less likely to report alcohol and opioid cravings and the repeated thoughts and obsessions with drug use when they are not using.

XR-NTX: A Long-Acting Approach

The great challenge for drug courts with any form of addiction medication treatment is ensuring participants benefit from the medication on a daily basis. Medication nonadherence and relapse are challenges, and naltrexone therapy is no different. It must be taken regularly to work. As a once-a-day pill, naltrexone can be difficult for participants to

take consistently. The newer XR-NTX formulation solves this daily adherence problem by means of an injection once a month. Once an injection is given, the participant receives the benefits of naltrexone continuously for the next 4 weeks. A goal of naltrexone medication treatment then becomes having participants receive an injection every month rather than take a pill every day. Once the injection is administered, cravings diminish and the alcohol-opioid drug reward pathway is disrupted, enabling participants to focus on behavioral therapy and sober living.

Logistics: How Is XR-NTX Provided?

XR-NTX is administered as a monthly intramuscular injection into the buttocks. It is similar in its tolerability and injection site side effects to other intramuscular injections such as risperidone (a medication for schizophrenia) or antibiotics, which are often given intramuscularly. Soreness and pain at the injection site are common, though usually mild. Much rarer is a severe injection site reaction resembling an abscess, which must be managed by a medical provider.

Like any prescription medication, XR-NTX must be prescribed by a licensed practitioner such as a physician or nurse practitioner. It is not a controlled substance and has no abuse or diversion potential, so any medical provider can order, store, and administer the medication. An injection may occur in any setting where a flu shot might be given, typically a medical exam room. XR-NTX comes in an envelope-sized box, which should be stored in a refrigerator. The patient typically lies down but can also remain standing for the injection. The skin is cleaned with alcohol or iodine, and the medication is injected into the upper, outer portion of the buttock, alternating sides each month. Because naltrexone is a long-acting opioid blocker, patients cannot be planning on opioid pain management or be using opioids at the time of the first injection. This means patients using alcohol should confirm they are not using opioids, and opioid patients must be detoxed and opioid-free prior to the first injection. XR-NTX is then given every 4 weeks.

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Practical Considerations: Who Should Use XR-NTX?

Which, if any, patients definitively do better on XR-NTX versus other therapies for alcohol or opioid addiction is unknown. XR-NTX can be offered to any drug court participant regardless of gender, ethnicity, or drug use history. Clearly, a participant choosing XR-NTX should find a monthly intramuscular injection to the buttock acceptable and must be able to achieve an opioid-free state prior to the first injection, two conditions not all participants will meet.

Most clinical trials have evaluated XR-NTX treatment in conjunction with comprehensive behavioral therapy and individual counseling in addition to medical management counseling offered by the medical provider at the injection visit (Garbutt et al., 2005; Krupitsky, 2011; Lee et al., 2010). Voluntary 12-step involvement has been encouraged in all these clinical trials. Outcomes of interest to drug court professionals are reduced opioid and alcohol use and retention in treatment, both of which are more likely with XR-NTX versus a placebo. XR-NTX can be paired with any

schedule of psychotherapy, court and program attendance, urine or saliva testing, and vocational or educational programming. XR-NTX is a nonnarcotic with no abuse potential, meaning the issues of diversion and secondary gain are not significant concerns.

Conclusion

XR-NTX, an opioid receptor antagonist or blocker, is a relatively new and novel approach to alcohol and opioid addiction treatment, administered as a long-acting monthly injection. A nonnarcotic and noncontrolled substance, XR-NTX can be prescribed by any medical prescriber and adapted to a wide range of treatment protocols for alcohol, opioid, or alcohol-opioid coaddiction. Preliminary pilot programs of XR-NTX in drug court, jail, and community parole settings demonstrate its feasibility and potential effectiveness in alcohol- and drug-using populations. Thus XR-NTX offers drug courts an effective tool to discourage program violations and promote successful outcomes for their participants.

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