

## Buprenorphine (Part 2)

**Dr. Joseph E. Graas, Scientific Director**  
**Dr. Edward Moore, Medical Director**

The metabolism of buprenorphine is dependent on each individual genetic production of the metabolic enzymes. There are genetic tests available that target the CYP450 enzyme, which may be able to help clinicians determine a patient's ability to fully metabolize a parent drug. This genetic uniqueness will produce different amounts of the metabolic enzymes through the CYP450 enzyme, which may result in the need to have monitored and adjusted dosing for each individual treated, or potentially, a different medication prescribed. Before changing a patient's dose, performing a serum buprenorphine level for the patient is important. The monitoring of serum/plasma values is done using a technique (e.g. HPLC/MS/MS) that can separate and identify each of these metabolites. These are a few things to consider when initiating or changing the patient's dose based on serum values.

### Subutex or Suboxone?

Often in clinical practice, a patient will demand to be placed on Subutex (buprenorphine alone), rather than Suboxone, which is a combination of buprenorphine and naloxone (the opiate antagonist Narcan). When the FDA approved buprenorphine for addiction treatment it was with the caveat that Suboxone would be primarily prescribed and that Subutex would only be prescribed in the rare case of allergy or documented adverse reaction to Suboxone. In fact, if the clinician chooses to use

Subutex, the rationale must be clearly documented in the patient's record.

Suboxone needs to be administered sublingually. The 8 mg Suboxone tablet requires approximately 10 minutes to be completely absorbed sublingually without swallowing during this time. From a practical standpoint, this is very difficult for a patient to do. While the Suboxone tablet is absorbing sublingually, if the patient continuously swallows the buprenorphine is absorbed in the gut. Because of either metabolism in the gut wall, or by first pass metabolism in the liver, the buprenorphine never reaches the brain in clinically significant amounts. Naloxone is not absorbed sublingually. If Suboxone is swallowed, the naloxone inhibits buprenorphine absorption.

The FDA understands that buprenorphine is a divertible medication (sold, bought or given away illegally) and in the addict population is abused and highly sought. In a study that compared placebo, other opiates and Subutex, addicts identified Subutex as equal to heroin on the desirability scales. Because it has no naloxone combined with it, it can be injected without fear of precipitating withdrawal. On the other hand, when Suboxone is injected by an addict who is opiate dependent (heroin, methadone, oxycodone, hydrocodone) they will undergo withdrawal that destroys its attraction as a drug to get "high" with. It is important to note, that if the opiate that the addict is dependent on is buprenorphine, then naloxone will not precipitate withdrawal. This is because buprenor-

phine has a higher affinity for the opiate receptor than almost any other opiate except for fentanyl, and it is for this reason that the patient already maintained on Suboxone can inject it without experiencing withdrawal.

Suboxone for opiate agonist therapy was initiated in response to the problems of access that opiate addicts have being prescribed, and complying with the rules surrounding the use of, methadone. The importance of having programs which give opiate addicts much greater access to treatment has been underscored recently by the press and various government entities covering the "national epidemic" in heroin and other opiate addiction, as well as the rise in deaths by overdose. The "Expert Panel" convened by the President surrounding this problem prompted the rule change for the maximum addicts that a provider can treat from 100 to 200.

The rules/laws surrounding methadone were carefully thought out to provide a safe approach to the prescription of methadone and treatment of addicted patients. The lack of legal structure and requirements with Suboxone presents an opportunity for treating larger numbers of patients. It also places risks on providers that do not have a treatment center or well-staffed clinic that can provide the infrastructure for urine testing, counseling and delivery of a recovery program, and thus becoming a writer of prescriptions that can be easily diverted or misused.