SDRL Laboratory

TOXICOLOGY TIMES

SDRL Laboratory

(800) 677-7995 **www.sdrl.com**

Volume 2, Issue 6 *A FREE Monthly Newsletter for Substance Abuse and Opioid Treatment Programs from San Diego Reference Laboratory* **June, 2012**

Serum Methadone Q&A (part 1)

What is serum methadone testing?

Methadone, administered daily at a steady dose, should be present in blood at levels sufficient to maintain "normalcy" over a 24-hour period. That is, the patient should not feel drugged or "high", nor have withdrawal symptoms (abstinence syndrome) during that time. The assumption in opiate treatment facilities is that the patient is taking their total dose; however, the patient could share or skip a dose. Measuring levels of methadone in the blood – in terms of nanograms per milliliter (ng/mL) – is helpful in determining how much of the medication is circulating in the patient's system. The measurements provide baseline serum methadone values that correspond to the patient's dose.

What is a "peak" and a "trough"?

A trough test is the lowest serum methadone value for a patient and is measured on a patient's blood sample drawn just prior to consuming their daily methadone dose. The trough should give the concentration of methadone that is the baseline for each patient that is not in withdrawal. Quite often, a patient will complain that the methadone dose is not holding them. This means that the serum value of methadone has fallen below the effective dose for that patient. A peak test is the patient's post-dose serum methadone value and is drawn three to four hours after dose consumption.

What do the peak and trough values reveal?

The peak and trough values confirm or disprove that the patient is taking his or her medication and is properly dosed. The steady state of the serum methadone values ensures that the methadone dose in the patient is a relative constant during the day. The values also help a patient's doctor in attempting to justify a dose change for the patient.

What is the relationship between the peak and trough values?

Ideally, the peak and trough values should be very nearly the same. This would indicate that the methadone absorbed by the patient in the daily dose is being distributed uniformly throughout the vascular and organ storage volume of the patient's body. The methadone is then available at a uniform rate at the opioid receptor binding sites.

What if there is a large variance between the peak and trough values?

The peak value at three to four hours post-dose should be no more than twice the trough value. A large variation between peak and trough values would indicate rapid metabolism (early peaking) and excretion of the methadone by the patient. This would support a patient's claim of withdrawal.

Part 2 of this article will appear in the July issue of *Toxicology Times*

??? Did You Know ???

Methylphenidate is not expected to be detected on a standard drug screen. Methylphenidate, commonly known as Ritalin or Concerta, is typically prescribed for conditions such as ADHD, Narcolepsy, or Chronic Fatigue System. The chemical structure of the primary molecules of the medication is similar to those of the Amphetamines class, but is not considered to be a member of that class. If the patient is taking more than the prescribed amount, it is possible that it can cause a positive on the Amphetamines class screen. However, in confirmation, it would confirm as Negative for both Amphetamine and Methamphetamine, as the medication is neither of those analytes.

Question of the Month

Question: *What is a Sodium Fluoride tablet used for? When should it be used?*

Answer: A person with diabetes (either diagnosed or undiagnosed), who is not properly controlling their condition, can 'spill' sugar into their urine. Post void, the sugars in the urine can convert into alcohol via fermentation. If this occurs, and there is a test for alcohol on the drug screen, it is highly likely that a Positive result for alcohol will be found. A Sodium Fluoride tablet, when placed in the urine sample immediately post void (within a few minutes), will inhibit the fermentation, and therefore prevent a Positive result for alcohol due to the diabetic condition.