

Letter to the Editor

## Numerous Studies Show Urine Drug Testing A Critical Tool in Treatment of Chronic Noncancer Pain

### **To THE EDITOR:**

I read with interest the article by Pesce et al entitled An Evaluation of the Diagnostic Accuracy of Liquid Chromatography-Tandem Mass Spectrometry Versus Immunoassay Drug Testing in Pain Patients: (*Pain Physician* 2010; 13:273-281). Numerous studies have shown that urine drug testing is a critical tool in the universal precautions used in the treatment of chronic noncancer pain patients and this study highlights some of the complexities therein (1-3).

The authors conducted an excellent diagnostic accuracy study comparing the results obtained by automated immunoassay screening with Liquid Chromatography-Tandem Mass Spectrophotometry (LC-MS/MS), showing that the latter technology decreases the number of false-negative results; immunoassay results were determined using an Olympus model 640 analyzer. Other pain physicians may also want to consider using an analyzer rather than the naked eye to read immunoassay results to decrease the number of false negatives. Our practice has seen a similar problem with false-negative opiate results in patients taking benzodiazepines and hydrocodone, a common medication used in pain management. Confirmatory testing, as discussed by the authors, is also helpful.

I agree that lowering opiate cutoffs is useful in evaluating established chronic pain patients on opiates and may improve the detection of exposure in abusers who have heretofore gone undetected; however, drug cutoff values must be high enough so that passive inhalation of smoke from cocaine or marijuana will not cause a positive test (4). In addition, physicians should be aware that urine concentrations at or above 15,000 nanograms per mL of opiates cannot be attributed to poppy seed ingestion (5).

The authors also point out the importance of the susceptibility of immunoassay to cross reactivities with other drugs. For example, acetaminophen, and meperidine react with other drugs such as quinolone antibiotics, causing many opiate immunoassays to show a positive result (6). Similarly diphenhydramine, dipyrindamole, meperidine, and doxylamine can often cause a false positive on immunoassays for methadone (7), while pantoprazole, an antiulcer drug, and other antiviral drugs may create a false-positive immunoassay for marijuana (8). False-positive immunoassay results for cocaine are extremely rare as is the medical use of cocaine; therefore, patients who test positive for cocaine should provide documentation of medical use in the last 72 hours. Furthermore, topical anesthetics such as procaine, lidocaine, and benzocaine have no structural similarity to cocaine or its metabolites and do not cause false-positive immunoassay drug test results.

The authors' technique of LC-MS/MS is a useful alternative to gas chromatography-mass spectrophotometry, which is not always readily available at local hospitals for confirmatory testing.

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## In Response

Thank you for asking us to comment on Dr. Gilbert's recent insightful letter in response to our article entitled "Evaluation of the Diagnostic Accuracy of Liquid Chromatography-Tandem Mass Spectrometry Versus Immunoassay Drug Testing in Pain Patients: (Pain Physician 2010; 13(3):273-281). These observations on a number of false positive and false negative urine drug test results for specific assays and drugs are useful for physicians employing immunoassays. Many doctors are not aware of the limitations of these assays. They should keep Dr. Gilbert's comments on hand when interpreting point of care- or immunoassay results. In addition, some of the limitations of these assays are defined in the package inserts that accompany these tests, though they are often not read, and the inserts themselves are often not complete. Due to the cost of analytical instruments and the expertise required to operate them and interpret the

data, it is unlikely that local hospitals will perform confirmation testing by mass spectrometry. The practicing pain physician will continue to have to send urine samples out to reference laboratories for confirmatory testing.

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