

Can Clinicians Accurately Predict Which Patients are Misusing Their Medications?



Bronstein K¹, Passik S², Munitz L¹, Leider H¹



¹Ameritox, Ltd., Baltimore MD, USA ² Vanderbilt University Medical Center, Nashville TN, USA

Abstract

Identifying patients on chronic opioid therapy (COT) who may be abusing or misusing their medications remains difficult despite the numerous risk assessment tools available. In this study, clinicians were asked to identify patients who they thought were at risk for medication misuse and those that weren't based on risk assessment methods used in their practice. In addition, a third group was identified as random with no risk assessments identified. Urine drug testing results were then compared with these assessments. For the purposes of this study, urine drug testing results were considered abnormal if illicit drugs were present, if the prescribed medications were absent from the urine sample, if unprescribed medication was found, and/or if testing results were above or below the expected range based on a proprietary algorithm. A total of 755 samples were received from 62 clinicians in 50 practices. Patients who were thought to potentially be misusing their medications (N= 226) had urine drug tests showing illicit, missing prescribed medication, unprescribed medication present, and/or results above or below range using Rx Guardian methodology 79% of the time. In patients Clinicians thought were not at risk for misuse of medications (N=297) 72% had urine drug tests showing illicit, missing prescribed medication, unprescribed medication present, and/or results above or below range using Rx Guardian methodology. The third group (N=232) showed 71% of samples had illicit, missing prescribed medication, unprescribed medication present, and/or results above or below range using Rx Guardian methodology.

Further subsets of the data were evaluated to see if lessening the criteria for the definition of abnormal improved clinicians' ability to predict UDT results. This study reinforces that all patients on chronic opioid therapy need to have urine drug monitoring in order to identify those patients who may be misusing their medications as risk assessment methods utilized in practice settings may miss a significant portion of these patients.

Purpose

This study was designed to assess how accurately clinicians can predict which patients on COT will have abnormal urine drug test results.

Design

Clinicians prospectively classified COT patients who were about to have a urine drug test into one of 3 groups: Group A: those patients thought to be taking their medications as prescribed, Group B: those patients thought to be misusing medications, and Group C: a random, unclassified group of patients for comparison. Clinicians were able to assess risk in patients by whatever methods they normally used in that practice. During the period of the study, 62 clinicians from 50 clinics submitted urine samples for analysis. Data was analyzed on 755 unique patient samples.

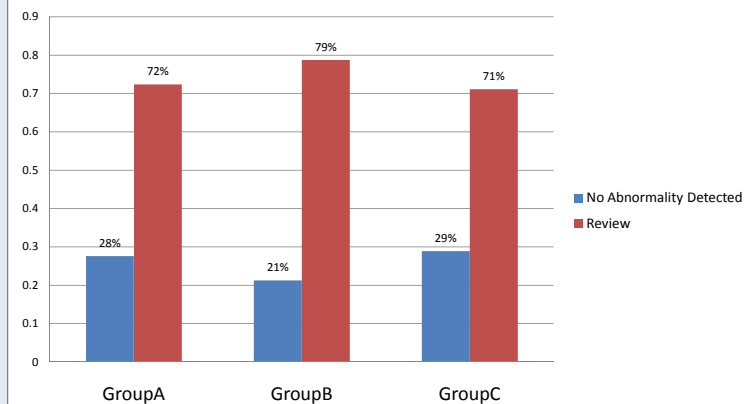
Results

Of the 755 samples, 297 were classified as coming from patients thought to be not at risk for medication misuse (Group A), 226 classified as coming from patients suspected of medication misuse (Group B), and 232 random samples (Group C). In Group A (N=297), 215 patients (72%) had either illicit present, prescribed drug absent from the urine, unprescribed drug present and/or results above or below range based on Amertiox's proprietary algorithm. Prediction accuracy increased in the group suspected of misusing their medications. Group B (N=226) had 178 samples (79%) with abnormal urine drug monitoring. Results of the unclassified samples in Group C (N=232) showed 165 (71%) were abnormal.

Results Continued

In order to see if relaxing the criteria for labeling a test abnormal improved a clinician's accuracy, urine drug test results that were found to have either an unprescribed medication found and/or results above or below range were removed from all groups. For this data cut, tests were considered abnormal only if illicit were present and/or prescribed drug was not found. This resulted in a data set of 549 samples. In Group A (N=204, those patients not suspected of medication misuse), 60% still had abnormal results; Group B (N=173, those suspected of medication misuse), 72% had abnormal results; and the random Group C (N=172) had 61% abnormal tests. Thus, relaxing the criteria for abnormal, slightly increased the accuracy of prediction in those patients not suspected of medication misuse and slightly decreased the accuracy in patients thought to be misusing medications.

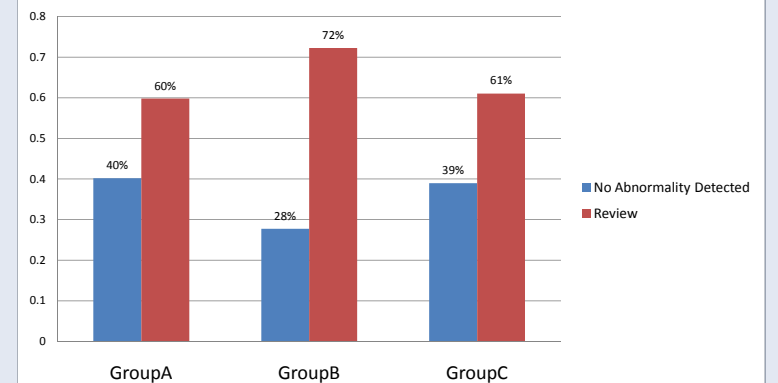
All Data Points
N=755



Group A: Those patients thought to be taking their medications as prescribed
Group B: Those patients thought to be misusing medications
Group C: A random, unclassified group of patients for comparison.

Results Continued

Subset of data:
Illicits and/or Prescribed medication not found
N=549



Group A: Those patients thought to be taking their medications as prescribed
Group B: Those patients thought to be misusing medications
Group C: A random, unclassified group of patients for comparison.

Conclusions

It is difficult to predict which patients are likely to be misusing opioids or taking an illicit drug. Clinicians were better able to predict medication misuse in patients where they thought there might be an issue based on whatever risk assessments they used in the clinic. Thus, if clinicians only test patients suspected of likely misusing medications, they are missing a significant group of patients, up to 72% in the large dataset and 60% in the narrower dataset that were likely misusing their medications without any identifiable risk behaviors