

Psychopathology and urine toxicology in methadone patients

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Abstract

Several studies reported high rates of psychiatric comorbidity among methadone patients. We examined the relationships of measures of psychopathology to outcomes of screening urine tests for cocaine, opiates, and benzodiazepines in a sample of 56 methadone patients. They also completed the Symptom Check List-90-Revised (SCL-90-R). The highest scales in the SCL-90-R profile of our patients were those indicating somatic discomfort, anger, phobic anxiety, paranoid ideation, and also obsessive-compulsive disorder symptoms (scores above the 39th percentile). The only significant correlations between urine tests and SCL-90-R psychopathology were those involving benzodiazepines: patients with urine tests positive for benzodiazepines had lower social self-confidence ($r=0.48$), were more obsessive-compulsive ($r=0.44$), reported a higher level of anger ($r=0.41$), of phobic tendencies ($r=0.40$), of anxiety ($r=0.39$), and of paranoid tendencies ($r=0.38$), and also reported more frequent psychotic symptoms ($r=0.43$).

Introduction

Several studies have documented high rates of psychiatric comorbidity in methadone patients: 63.6% reported by Weizman *et al.*,¹ 76% by Callaly *et al.*,² and 47% in Brooner *et al.*³ Mood disorders preponderantly in the form of depressive symptoms, anxiety disorder, or the antisocial personality, are reported in many of such prevalence studies. Weizman *et al.*¹ determined that 37.9% had mood disorder, 31.8% had anxiety disorder, 4.5% had schizophrenia, 69.7% were diagnosed with a personality disorder, and 50% were found to have an antisocial personality disorder. In the study by Brooner *et al.*,³ the most common diagnoses were the antisocial personality disorder (25.1%) and major depression (15.8%). The prominence of certain diagnostic categories in methadone patients presumably varies from clinic to clinic, from sample to sample, and also

depending on diagnostic criteria. A major factor causing this variability could also be concurrent substance abuse. In general, patients who abuse benzodiazepines while in methadone treatment have worse treatment outcomes.⁴ Bleich *et al.* reported that methadone patients who were abusing benzodiazepine currently also abused more cocaine, heroin and cannabis. They experienced significantly more psychopathology and negative mood.⁵ Our study examined the relationship of psychological measures of psychopathology to outcomes of screening urine tests for cocaine, opiates, and benzodiazepines.

Materials and Methods

A sample of 56 outpatients in a Canadian methadone clinic (mean age 34.0, SD=9.0, 34 males, 22 females) were undergoing repeated urine screening tests for opiates, cocaine, and benzodiazepines for 8 weeks. All completed the Symptom Check List-90-Revised (SCL-90-R).⁶ The SCL-90-R is a 90-item questionnaire of psychopathology which provides standardized measures along the dimensions of anxiety, depression, paranoid ideation, obsessive-compulsive symptoms, hostility, phobic symptoms, somatic complaints, and psychotic symptoms. All patients also completed Drug Abuse Screening Test (DAST)⁷ and Alcohol Use Identification Test (AUDIT).⁸ Their scores on the 20 item version of DAST ranged from 1 to 19 points with the average at 9.0 points (SD=4.6). The scores on AUDIT ranged from 0 to 33 points, with the average at 4.3 (SD=6.2).

Urine screening tests were carried out randomly. The average number of tests per patient was 11.5 (SD=3.9). We have quantified the urine test results as % positive = positive tests divided by the total N of tests. This score was calculated separately for each of the three tests, *i.e.*, for the one involving opiates, another one for cocaine, and yet another one for benzodiazepines. The patients also rated their concurrent illicit use of these three substances on a rating scale from 1 (complete abstinence) to 4 (more than occasional relapses).

The methadone dose in this group ranged from 3 mg to 95 mg, with the average at 48.7 (SD=25.0). The dose was not significantly correlated with age and gender ($P>0.05$). Only 5 of the 56 patients were concurrently on other prescribed psychiatric medication: 4 on quetiapine 50 mg for psychotic symptoms and one on trazodone 50 mg for depressive symptoms. To quantify the level of psychopathology of our patients, we have plotted the SCL-90-R scores on the standard SCL-90-R profile sheets for general outpatient psychiatric population: in this manner, we obtained their percentile scores on scales of psychopathology.

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Results

Symptom Check List-90-Revised profile of psychopathology

In the average SCL-90-R profile, the only mean score above the 50th percentile, *i.e.*, above the median for the general psychiatric population, was on the scale measuring somatic complaints. This suggests that methadone patients might more frequently report somatic problems than would other psychiatric patients. Perhaps some of our patients originally become addicted to opiates while coping with chronic pain (*e.g.*, hospital nurses with back injuries who had an easy access to opiate based medications). All other scales in the average SCL-90-R profile of our patients were below the median for the general psychiatric population. The only scores above or at the 40th percentile were those on measures of hostility, phobic anxiety, paranoid ideation, and to less prominent extent, also OCD symptoms.

Urine toxicology

The urine tests in our sample of methadone patients were positive for cocaine in 31.4% of the tests, those for benzodiazepines in 8.9%, and those for opiates were positive in 25.0% of the tests.

Psychopathology versus positive urine tests

The relationships of psychopathology to urine tests were evaluated via Pearson correlation coefficients. Given the large size of the correlation matrix, only coefficients meeting the statistical criterion of $P < 0.01$ (2-tailed) are reported here to avoid spurious findings.

The significant correlation coefficients indicated that patients positive for benzodiazepines were less socially self-confident ($r = 0.48$), more obsessive-compulsive ($r = 0.44$), more angry ($r = 0.41$) and phobic ($r = 0.40$), anxious ($r = 0.39$), and paranoid ($r = 0.38$), and they also experienced more psychotic symptoms in general ($r = 0.43$). These correlations are of moderate strength.

Urine tests for opiates and cocaine also correlated with SCL-90-R scales in the expected directions, without exception, however, these coefficients failed to reach our level of statistical significance pre-set to $P < 0.01$, 2-tailed.

Methadone dose versus psychopathology

Antipsychotic properties of opiate agonists were demonstrated in several clinical studies. Brizer's team showed in a placebo-controlled crossover study that methadone added to standard neuroleptic therapy resulted in a significant improvement in patients with chronic paranoid schizophrenia.⁹ Schmauss *et al.* found significant antipsychotic effects with buprenorphine (partial opioid agonist) in a study on neuroleptic-free schizophrenic patients.¹⁰

In our study, the methadone dose ranged from 3 to 95 mg, with the average at 48.6 (SD=25.3). Although all correlation coefficients of methadone dose to psychopathology were inverse, thus suggesting that higher methadone dose was associated with less prominent concurrent psychopathology on SCL-90-R scales, the absolute size of these coefficients was too low, ranging only from

0.06 to 0.16 and none of these correlations reached the usual criterion of statistical significance: all were at $P > 0.05$. It is possible that our patients on a higher dose of methadone benefitted from its antipsychotic properties and that patients who successfully decreased their methadone to very low levels were initially those less likely to suffer from psychopathology other than addiction: these two opposing trends may have balanced each other out.

Urine tests versus self-reports of concurrent illicit substance abuse

The correlations of urine tests to self-reports of substance abuse were significant and of moderate strength. Urine tests significantly correlated with patients' self-ratings of cocaine use ($r = 0.55$), with self-rating of benzodiazepine use ($r = 0.46$), and with self-rating of opiate use ($r = 0.38$). Perhaps the patients' knowledge that their urine tests were available to us for verification of their self-reports contributed to these significant correlations.

Discussion and Conclusions

In our sample of 56 methadone maintenance patients, the most prominent scores on SCL-90-R were those on scales indicating somatic complaints, hostility, phobic anxiety, paranoid ideation, and to less marked extent, also OCD symptoms. Patients with urine tests positive for benzodiazepines were significantly more obsessive-compulsive, anxious, phobic, socially insecure, angry, and scored higher on measures of paranoid tendencies and of psychotic symptoms in general.

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