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Perceived Relapse Risk and Desire for Medication Assisted Treatment among Persons Seeking Inpatient Opiate Detoxification

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Abstract

Most patients with opioid addiction do not receive medication at the time of discharge from brief inpatient detoxification programs despite the high risk of relapse and the availability of three FDA-approved medications. We surveyed 164 inpatient opioid detoxification patients to assess desire for pharmacotherapy following detoxification program discharge. Participants were predominantly male (71.3%) and 80% had detoxed in the past. Reporting on their most recent previous inpatient detoxification, 27% had relapsed the day they were discharged, 65% within a month of discharge, and 90% within a year of discharge. 63% reported they wanted medication-assisted treatment (MAT) after discharge from the current admission. The odds of desiring a treatment medication increased by a factor of 1.02 for every 1% increase in perceived relapse risk ($p < .01$). These data suggest patient preference discussions including relapse risk could increase post-detox abstinence.

1. Introduction

Medically-assisted inpatient drug withdrawal, or detoxification, is a common initial treatment for persons with opioid dependence attempting to stop illicit use of heroin or non-prescribed opioids (Carrier, et al., 2011; Mark, Dilonardo, Chalk, & Coffey, 2002; Substance Abuse and Mental Health Services Administration, 2004). The goal of detoxification, during the 4–7 days typical of most publicly funded inpatient treatment programs in the United States, is to initiate long-term drug abstinence, but this is rarely realized. Numerous studies have found that the majority of patients relapse soon after discharge (Amato, Davoli, Ferri, & Ali, 2004a; Broers, Giner, Dumont, & Mino, 2000; Gossop, Green, Phillips, & Bradley, 1989; Gossop, Stewart, Browne, & Marsden, 2002). One study determined that 59% of patients relapsed within one week after completing an inpatient detoxification program (Smyth, Barry, Keenan, & Ducray, 2010). Such data continue to confirm an Institute of

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Medicine (IOM) report from two decades ago that stated detoxification was seldom effective by itself as a modality for lasting recovery (Institute of Medicine, 1990). The IOM report suggested that perhaps detoxification could be used “as a gateway to other treatment modalities” (Institute of Medicine, 1990).

Referral to substance abuse treatment after discharge is a stated goal of all detoxification programs. Treatment options include outpatient, residential, abstinence-based, and behavioral programs, alone or in combination with medication-assisted treatment (MAT). For those who desire opioid-agonist maintenance treatment, methadone and buprenorphine have demonstrated similar effectiveness (Fiellin, 2007; Fiellin, et al., 2008; Fudala, et al., 2003; Kreek, Borg, Ducat, & Ray, 2010; Mattick, Breen, Kimber, & Davoli, 2009; Mattick, Kimber, Breen, & Davoli, 2008). More recently, an injectable, extended-release form of naltrexone, an opioid antagonist, was FDA-approved as another option for treatment of opioid dependence (Gastfriend, 2011; Krupitsky, et al., 2011). Detoxification programs, however, are often ineffective in linking the majority of patients to aftercare (Amato, Davoli, Ferri, Gowing, & Perucci, 2004b; Mark, Dilonardo, Chalk, & Coffey, 2003), creating a “revolving door” of multiple detoxification admissions and a significant health policy problem (Carrier, et al., 2011; U.S. Department of Health and Human Services, 1995). Recent analysis of Massachusetts Medicaid expenditures revealed that 11% of their opiate dependent clients have more than six detoxification admissions per year (correspondence with Hillary Jacobs, 2011). Despite treatment options, a recent Cochrane review of opiate detoxification determined most individuals relapse after treatment (Amato, Minozzi, Davoli, & Vecchi, 2011).

While there are systemic barriers to care linkage following detoxification such as limited methadone and buprenorphine slots and long wait list for outpatient or residential treatment, patient-based barriers are also notable. In particular, patients' treatment preferences may strongly influence post-detox decisions, yet little is known about what factors influence their choices or which treatment option clients prefer. In one study of 104 opioid dependent patients, only 34% believed that treatment maintenance with oral methadone, buprenorphine, or drug-free rehabilitation, for 6 to 18 months, was superior to detoxification alone in preventing illicit heroin use (Luty, 2004). In a second study analyzing factors related to patient preference for buprenorphine or methadone among 190 opiate dependent patients seeking pharmacotherapy treatment, preferences correlated with actual clinical prescribing practices. The odds of being prescribed buprenorphine were three times greater among those reporting a preference for it; similarly, the odds of receiving methadone were twice as great among those requesting methadone (Ridge, Gossop, Lintzeris, Witton, & Strang, 2009) and matching treatment to preference could improve abstinence rates. However, neither of these studies evaluated patients during inpatient detoxification, when a transition to outpatient treatment is most relevant, neither included a discussion of patients' perceived risk of relapse and its relationship to treatment preference, and both studies were performed before injectable naltrexone was available.

Our study was designed to evaluate the post-detoxification treatment desire for MAT among patients undergoing inpatient detoxification, and to investigate the factors that influence this desire.

2. Methods

Between March and June 2011, we approached 186 consecutive English-speaking patients receiving inpatient opioid detoxification at Stanley Street Treatment and Resource, Inc. (SSTAR) in Fall River, Massachusetts on day 2 of their stay. SSTAR is a 38-bed facility with a mean length of stay of 5.9 days that uses a methadone taper protocol (as well as individual and group counseling and case management) as part of its opiate detoxification program.

Opioid use was confirmed with urine toxicology at the time of admission. Individuals enrolled in methadone or buprenorphine maintenance programs at admission were excluded from the survey. Twenty-two patients failed to complete surveys (5 were discharged before research staff could interview them, 8 had unplanned AMA discharges, and 9 refused participation), leaving 164 patients who gave verbal consent and completed the survey. Participation was voluntary, anonymous, and not incentivized. All surveys were administered by non-treating research staff and required approximately 15 minutes. This research was approved by the Butler Hospital Institutional Review Board.

Participants reported their opioid of choice (quantity, route of administration, length of dependent use), other drug use in the previous 30 days, and past treatments with buprenorphine (Suboxone), methadone, and injectable naltrexone (Vivitrol). Participants who had previously completed an inpatient detoxification reported the treatment they received after their last discharge and the time to relapse. Participants were asked, “When you leave detox this time, do you want to take medication such as Suboxone, methadone, or Vivitrol for your opiate addiction?” Research staff offered a scripted explanation of each medication prior to asking questions concerning medication desire. Participants were asked about their perceived risk of relapse with the question “What is the chance that you will return to drug use in the next few days or weeks on a scale from zero (no chance) to 100 (will definitely use)?”

2.1 Analytical Methods

We present descriptive statistics to summarize the characteristics of the sample. Small amounts of item-specific missing data were observed. Complete data were observed for 146 (89.0%) participants. We used multiple imputation by chained equations (Azur, Stuart, Frangakis, & Leaf, 2011) to efficiently utilize all available data. Specifically, prior to evaluating associations, we used the companion programs ice and mim (Royston, 2005a, 2005b, 2007) as implemented in Stata 10.1 (StataCorp, 2008) to generate and analyze ten imputed data sets. Bivariate and multivariate logistic regression were used to estimate the associations of background characteristics and substance use indicators with interest in receiving a medication to treat opiate dependence.

3. Results

Participants averaged 32 (± 9.5) years of age, 71.3% were male, and 95.6% were non-Hispanic Caucasian (Table 1). Heroin was the preferred opiate for 110 (67.1%) participants, with others (32.9%) preferring prescription opioids (Oxycodone 21.5%, Hydrocodone 10.4%, Fentanyl 1%). More than two-thirds of participants (67.1%) were injection drug

users, and participants regularly used opiates for an average of 8.4 (± 8.2) years. The self-reported rate of alcohol use in the month prior to data collection was 55.6%. About 33.1% had a positive urine toxicology test for cocaine.

Only 33 (20.3%) participants said they had no prior opiate detoxification; 66 (40.5%) said they had relapsed within the first week following their last detoxification, and 64 (39.3%) said their relapse occurred more than a week after their last detoxification. Self-perceived relapse risk was assessed on a scale from 0% to 100%; the most frequently observed responses were 0% (12.0%), 50% (28.5%), and 100% (17.1%). The mean response was 53.4% (± 33.9, Median = 50.0) (Table 1). More than three in five participants (62.5%) said they would want to receive Suboxone, methadone, or Vivitrol after discharge. Lower perceived risk of relapse was significantly associated with Non-Hispanic Caucasian race ($b = -31.19$, $t = -2.65$, $p = .011$) and cocaine positivity ($b = 12.16$, $t = 2.01$, $p = .048$), but not with age ($p = .873$), gender ($p = .853$), opiate of choice ($p = .107$), years of opiate use ($p = .391$), injection drug use ($p = .237$), use of alcohol ($p = .158$), or reporting a prior detoxification experience ($p = .811$). Among persons with a prior opiate detox, perceived relapse risk was inversely and significantly ($b = -.16$, $t = -2.07$, $p = .041$) associated with days to relapse after last detoxification.

Gender, years of regular opioid use, and perceived risk of relapse were associated significantly with desire to use MAT for opiate addiction (Table 2) after leaving detox. Relative to females, males were less than half as likely (OR = .46, 95%CI 0.21; 0.98, $p < .05$) to say they wanted to use medications to treat their opiate addiction. Desire to use medications was inversely and significantly associated with years of regular opiate use (OR = 0.96, 95%CI 0.92; 1.00, $p < .05$). For every 1% increase in perceived relapse risk, the odds of desiring a treatment medication increased by a factor of about 1.02 (95%CI 1.01; 1.03, $p < .01$). Desire to use treatment medications was not associated significantly with ethnicity, opiate of choice, injection drug use, recent use of alcohol, testing positive for either buprenorphine or cocaine, or time to relapse following previous detoxification. Adjusted associations were of similar magnitude though the coefficient for gender was not significant at the .05 level after adjusting for years of regular opioid use and perceived relapse risk (Table 2).

4. Discussion

The role of patient preference in treatment selection is rarely discussed in the substance-abuse literature. Little is known about factors, in particular perceived risk of relapse, that impact preference or willingness to take medications for addiction. In this study of primarily white, male, injection heroin users, recruited during an inpatient detoxification episode, 63% reported a desire to receive any of three approved medication-assisted treatment aftercare options for their opiate use. Higher perceived risk of relapse was associated with greater willingness to receive aftercare medication.

A quarter of our participants admitted to drug relapse on the day of their last detoxification discharge, and the majority relapsed within the first month. Indeed, many reported being in a detox program within the month prior to study enrollment. Clearly, detoxification alone was

not protecting participants from relapse to opioid use. Yet more than a third had no interest in medication treatment. Based on the findings of other studies (Amato, et al., 2004a; Broers, et al., 2000; Gossop, et al., 1989; Gossop, et al., 2002; Smyth, et al., 2010) and our participants' most recent detoxification experience, we speculate that some participants simply underestimate their risk of relapse. In addition, study participants may judge methadone or buprenorphine treatment as substituting one addiction for another and would prefer other, drug-free treatment options. Others may not want ongoing engagement with treatment providers, perhaps due to negative experiences in the past. Some persons may not be interested in long-term abstinence at all, and utilize inpatient detoxification to diminish their opiate tolerance in order to make their “habit” more affordable. Exploration of these possibilities may allow clinicians to tailor both the inpatient detoxification experience and the transition to aftercare. Still, the important clinical concern remains how to get the two-thirds of participants interested in MAT into treatment. Interest in treatment does not mean that participants necessarily “intend” to search out MAT or, more critically, that they will actually receive MAT, topics worth exploring in future work.

The involvement of patients in their treatment is a priority in current medical practice (Battersby, et al., 2010; Coleman, Austin, Brach, & Wagner, 2009). Chronic disease management models that successfully engage the patient in his/her care are growing in the treatment of hypertension, diabetes, depression (Coleman, et al., 2009) and alcoholism (Watkins, Pincus, Tanielian, & Lloyd, 2003). Patient preference impacted treatment outcome in a study of in-home versus office-based induction of buprenorphine where patients were allowed to choose their induction strategy (Cunningham, et al., 2011; Sohler, et al., 2010). Of course, patient choice may not result in an evidence-based treatment plan. Two thirds of Luty's opioid dependent sample (Luty, 2004) preferred detox to maintenance treatment, which is not consistent with our finding that only 37% of our patients did not want any form of ongoing pharmacotherapy, but this study was done prior to buprenorphine treatment dissemination or the availability of Vivitrol. Clearly, therapeutic strategies need to enlist substance abusing individuals in treatment decisions, but must also assist patients by providing an informed assessment of their chronic relapsing disease and risk for relapse. The growing provision of Vivitrol and Suboxone may offer better long term MAT with fewer logistical and stigma barriers than methadone (Fiellin, 2007), and could improve patient acceptance of MAT following detoxification.

Our study had several limitations. First, we relied on self-report of past drug use, relapse, and treatment histories. Second, our surveyed population was limited to individuals seeking detoxification, and therefore may have limited generalizability to other opioid dependent persons. Many addicted individuals who prefer medication treatment enter directly into methadone or buprenorphine maintenance programs from the community, and Vivitrol treatment had only recently been FDA approved at the time of the study. Of note however, our participants had past experience with medication-assisted treatments (43% methadone maintenance, 42% prescribed buprenorphine and 6% Vivitrol), so there is clearly overlap in these patient populations. Our principal measures were based on answers to single questions, designed to explore participant attitudes and preferences; a more detailed probing could have strengthened our findings. Third, the wording of the relapse risk question, our main independent variable, asked about “return to drug use,” and not specifically opiate use. Poly-

substance users might have construed this question to mean any drug use, although all participants were seeking opiate detoxification and were positive for opioids on treatment entry. Fourth, data was collected on day 2 of the inpatient stay; responses about medication desire and perceived risk might have been different if assessed on another day, for instance when withdrawal symptoms were greatest, or just prior to discharge. Finally, desire for treatment is a complex decision (Fischer, Jenkins, Bloor, Neale, & Berney, 2007), and factors not evaluated by our survey such as past experience with maintenance treatment, behavioral norms, affordability, treatment access, provider availability, and transportation are obstacles to care that may have influenced what MAT modalities an individual was willing to consider.

This is the first study to consider the perceived risk of relapse as a way of understanding patients' desire for medication assisted treatment. In addition to years of opiate use (which could signal addiction fatigue and is correlated with age), greater awareness of one's relapse risk was the only factor associated with an increased willingness to accept evidence-based, medication-assisted treatment. Despite the significant clinical and empirical support for the use of three FDA approved medications (Fiellin, et al., 2008; Fudala, et al., 2003; Kreek, et al., 2010; Krupitsky, et al., 2011; Mattick, et al., 2009; Mattick, et al., 2008), most patients are not prescribed any medication at the time of discharge from an inpatient detoxification unit (Mattick, et al., 2009; Mayet, Farrell, Ferri, Amato, & Davoli, 2005), and patients are often not directly linked to providers who can offer one or more of these treatment options for maintenance pharmacotherapy (Campbell, et al., 2010; Lee, Morrissey, Thomas, Carter, & Ellis, 2006; Mark, et al., 2002). Program administers, clinicians, and policymakers need to incorporate patients' preferences and knowledge of relapse risks into their post-detox treatment planning in order to maximize the referral process and address barriers to maintaining abstinence at a time when an increasing numbers of patients may indicate a desire for medication assisted aftercare.

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Table 1

Background Characteristics.

	Valid n	n (%)	Mean (± SD)
Age	164		31.7 (± 9.5)
Gender (Male)	164	117 (71.3%)	
Ethnicity (non-Hispanic Caucasian)	160	153 (95.6%)	
Years Regular Opiate Use	163		8.4 (± 8.2)
Opiate of Choice (Heroin)	164	110 (67.1%)	
Injection Drug User (Yes)	164	107 (65.2%)	
Alcohol Use (Self-Report Yes)	160	89 (55.6%)	
Cocaine (Toxicology +)	160	53 (33.1%)	
No Prior Detox		33 (20.3%)	
≤ 7 Days After Prior Detox		66 (40.5%)	
> 7 Days After Prior Detox		64 (39.3%)	
Perceived Relapse Risk (0% – 100%)	158		53.4 (± 33.9)
Desire Medication-Assisted Treatment (Yes)	160	100 (62.5%)	

Table 2

Logistic Regression Analysis of the Unadjusted and Adjusted Effects on the Odds of Desire to Use Medications Following Discharge From Detox (n = 164).

Predictor	Unadjusted OR (95%CI)	Adjusted[a] OR (95%CI)
Gender (Male)	0.46 * (0.21; 0.98)	0.46 (0.20; 1.03)
Ethnicity (non-Hispanic Caucasian)	0.26 (0.30; 2.24)	-----
Opioid of Choice (Heroin)	0.89 (0.45; 1.76)	-----
Years Regular Opioid Use	0.96 * (0.92; 1.00)	0.95 * (0.91; 0.99)
Injection Drug User (Yes)	0.62 (0.31; 1.23)	-----
Alcohol Use (Self-Report Yes)	1.59 (0.83; 3.04)	-----
Cocaine (Toxicology +)	1.43 (0.71; 2.89)	-----
Perceived Risk	1.02 ** (1.01 1.03)	1.02 ** (1.01; 1.04)
Prior Relapse		
No Prior Detox	2.19 (0.85; 5.65)[b]	-----
> 8+ Days After Prior Detox	1.18 (0.58; 2.39)	-----
≤ 7 Days After Prior Detox [REF]	[1.00]	

* p < .05,

** p < .01

[a] The multivariate model included covariates with statistically significant (p < .10) unadjusted associations with desire to use treatment medications.

[b] The unadjusted association between perceived relapse risk and the categorical indicator of prior relapse was not statistically significant (LR2 = 3.00, df = 2, p = .232).