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High drug related mortality rates following prison release: Assessing the acceptance likelihood of a naltrexone injection and related concerns

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ABSTRACT

Background and aims: High drug related mortality amongst former prisoners in the 4 weeks following release is an internationally recognised problem. Naltrexone injections at release could diminish this by blockading opioid receptors, but naltrexone is not licensed for injection for treating opiate misuse in the United Kingdom and some other countries. This study examined the likelihood of accepting a naltrexone injection at release, and the relationship of this likelihood to other relevant variables.

Method: Sixty-one male prisoners with a history of heroin use, who were approaching release from two prisons in the north-west of England, provided likelihood ratings for accepting a naltrexone injection if it were to have been available. Additional data was gathered regarding demographic and drug use histories, and also from psychometric instruments relevant to drug misuse and treatment preparedness.

Results: Maximum likelihood ratings for accepting a naltrexone injection were recorded by 55.7% of the sample with only 9.8% indicating no likelihood of accepting an injection. Likelihood ratings were positively related to serving a current sentence for an acquisitive offence compared to drug related or violence offences, and negatively related to peak methadone dosages during the current sentence.

Conclusions: Although naltrexone injections were not available to participants in this study, the findings suggest that the potential uptake for this intervention is sufficient to warrant a clinical trial with this population of British prisoners, with a view to potential changes to its current licencing status. However, the importance of individual patient readiness for such an abstinence orientated intervention is emphasised by the negative correlation between the likelihood ratings and recent methadone doses.

1. Introduction

An elevated mortality rate for recently released prisoners with a history of opiate misuse, compared to the general population, has been highlighted by the World Health Organisation (2014). Evidence from several countries supports this observation, with causes of death related to opiate misuse being associated with elevated mortality in the first month following prison release (Binswanger et al., 2007, 2012; Farrell & Marsden, 2005, 2008; Huang et al., 2011; Kariminia et al., 2007; Singleton, Pendry, Taylor, Farrell, & Marsden, 2003), and particularly within the first 2 weeks since release (Merrall et al., 2010). In one study, newly released prisoners were reported to be approximately 40 times more likely to die in the week following release compared to the general population, with drug related causes being reported in approximately 90% of these deaths (Singleton et al., 2003). A combination of the diminution of opiate tolerance whilst incarcerated, and a hedonistic

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intention to enjoy newly re-acquired freedom, appears to be associated with this high prevalence of premature deaths (e.g. Binswanger et al., 2007; Merrall et al., 2010).

The misuse of drugs is acknowledged as a serious problem in the British criminal justice system, which was the context of the present study. In their most recent report to address this issue, the House of Commons Home Affairs Committee noted that 70% of offenders reported having misused drugs prior to prison admission, 51% of offenders were deemed to have drug dependency problems, and that 35% of offenders had engaged in injecting behaviour (House of Commons, 2012). Furthermore, one survey of British prisoners reported that 19% of those who declared that they had used heroin indicated that their first use of the drug occurred in prison (Prison Reform Trust, 2012). In response to this situation, detailed clinical guidelines exist for the treatment of substance abuse problems in the prison population which acknowledge the importance of both maintenance and detoxification strategies in treatment, and which also address the need for careful management of the transition back from prison into the community (Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group, 2017; NICE, 2007). These guidelines emphasise the importance of using opiate substitution treatment (OST) to maintain the stability of patients in prison, and that any change in treatment strategy to one of detoxification needs to be a matter of clinical judgement regarding the patient's readiness for this change, in the context of their willingness and ability to pursue such a strategy. The guidelines oppose an enforced removal of OST and the consequent imposition of opiate withdrawal on patients in prison, in line with evidence for the potential benefits to patients of continuing the availability of OST in prison (e.g. Rich et al., 2015). Whilst the United Kingdom Ministry of Justice acknowledges the role of OST in treating opiate dependence in prisons, it also advises that wherever possible, drug dependent prisoners be encouraged to pursue a recovery strategy in the form of drug abstinence (House of Commons, 2012). In considering the question of treatment for opiate misuse amongst prisoners more broadly, it is important to remember that the availability of OST will vary across national jurisdictions with, for example, limited availability in the United States (Maradiaga, Nahvi, Cunningham, Sanchez, & Fox, 2016; Mitchell et al., 2009).

One intervention for minimising the risk of a post-release opiate overdose is the provision of the opiate antagonist naloxone and the equipment to inject it, so as to counteract the overdose (Bird & Hutchinson, 2003; European Monitoring Centre for Drugs and Drug Addiction, 2018; Parmar, Strang, Choo, Meade, & Bird, 2016; Strang, 2015). However, this strategy does not diminish the likelihood of an overdose initially occurring, and relies upon either the user being sufficiently capable of self-administering the injection, or another person being present who is capable and willing to administer it. An alternative intervention is the administration of the opiate antagonist naltrexone to blockade μ-opiate receptors against exogenous opiates such as heroin, and consequently diminish the likelihood of positive reinforcement arising from their administration (Adi et al., 2007; Martin, Jasinski, & Mansky, 1973; Schuh, Walsh, & Stitzer, 1999). Oral administration of naltrexone can provide a dose dependent blockade of μ-opiate receptors for between 3 and 5 days, but there is evidence to indicate limited effectiveness for relapse prevention (Adi et al., 2007; Coviello, Cornish, Lynch, Alterman, & O'Brien, 2010; Minozzi et al., 2011), with high treatment drop-out rates being common. An alternative longer acting administration method for naltrexone is by implantation, but the effectiveness and acceptability to patients of this intervention compared to conventional treatments have not been clearly established (Larney et al., 2014; Lobmaier, KunØe, Gossop, Katevoll, & Waal, 2010).

Slow release injectable naltrexone formulations offer an effective opiate receptor blockade for approximately 4 weeks, which has been shown to contribute to relapse prevention (Comer et al., 2002, 2006; Krupitsky et al., 2011; Krupitsky & Blokhina, 2010; Lobmaier, KunØe, Gossop, & Waal, 2011; Sullivan et al., 2013; Wang et al., 2014). Consequently, a naltrexone injection at prison release may potentially contribute to curbing post release elevated mortality. Contraindications for the use of naltrexone include impairments to both kidney and liver functioning (Accord Healthcare, 2018; British National Formulary, 2017). Trials of injectable naltrexone with newly released prisoners in the United States show it to be acceptable to some prisoners (Friedman, Wilson, Hoskinson, Poshkus, & Clarke, 2018; Gordon et al., 2015; Lee et al., 2015; Vagenas et al., 2014) and effective in curbing relapse to opiate use. In one study, a second injection 4 weeks after release was shown to be effective in curbing relapse at an 8 week follow-up (Lee et al., 2015) in those participants remaining in the trial. Naltrexone is not currently licensed for injectable administration for treating opiate misuse in the United Kingdom and some other countries such as Holland, with no evidence therefore being available concerning its likely uptake by prisoners within these populations if it were to be available. However, Dutch patients in community based methadone maintenance (MMT) or heroin assisted treatment (HAT) who wished to become abstinent have expressed intended acceptance of this intervention (Zaaijer, Goudriaan, Koeter, Booij, & van den Brink, 2016).

Whilst clinical trials have shown that naltrexone injections were acceptable to some prisoners at their time of release, the offer of this treatment was not universally accepted. For example, Gordon et al. (2015) reported that 45 potential participants declined to participate in their trial, compared to the 97 who did, constituting an approximate refusal rate of 31.7%. Lee et al. (2015) reported the completion of consent procedures with 48 out of 142 potentially eligible participants (i.e. 33.8%), but procedural difficulties with screening make it difficult to identify a clearly defined refusal rate for this trial. Two other trials only report details of participants who completed the consent procedures (Friedman et al., 2018; Vagenas et al. 2014). The demonstrated effectiveness of the μ-opiate receptor blockade following a naltrexone injection (Sullivan et al., 2013; Wang et al., 2014) means that, at a subjective level, abstinence from the desired effects of opiate misuse is effectively being enforced for a 4 week period, and this may pose serious challenges to some potential participants which need to be understood at this early stage in the deployment of this intervention. The importance of the willing participation of prisoners in an abstinence orientated treatment makes this an important research question (Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group, 2017).

Studies with prisoners approaching release have not so far examined the variables associated with the decision to accept injections of naltrexone or not. The present study attempted to examine some potentially relevant variables in a sample of British prisoners with a history of opiate dependence who were close to release into the community. It should be noted that this treatment option was not available to them at the time of data collection due to the licencing regulations for naltrexone in the United Kingdom. However, the research team considered that gathering such data at this time would not only demonstrate a willingness within this population to accept the treatment or not, but would also facilitate the delivery of the treatment in a timely manner if the licencing situation changed, due to the awareness available to treatment providers regarding variables which might be associated with the decision of prisoners to accept it or not.

The choice of instruments to be administered was guided by issues in treatment arising in the existing literature for other interventions and other treatment contexts. For example, motivation for treatment and confidence for being able to maintain abstinence constitute important elements of a drug dependent patient's psychological preparedness for treatment (Hampton et al., 2011; Murphy & Bentall, 1992; Murphy, Bentall, Ryley, & Ralley, 2003). Related to motivation and confidence are likely to be previous experiences of the challenges of maintaining abstinence such as the influence of heroin using associates (Liu et al., 2013; Mullen & Hammersley, 2006), coping with craving (Evren et al., 2014; Tasić, Valkanou, Đukanović, Banković, & Janjić, 2018), and coping with problems of mood (Hammerbacher & Lyvers, 2006; Min