

## A 24 h inpatient detoxification treatment for heroin addicts: a preliminary investigation

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### Abstract

The present study describes a detoxification method which takes only . 4 h to complete. Eleven polydrug users addicted to opiates were detoxified 12 h after their last dose of heroin, in an intensive care unit. The detoxification was carried out using naltrexone, after sedation with midazolam. After detoxification (12 h) patients were discharged without withdrawal symptoms. This procedure offers a rapid detoxification procedure which seems to be widely accepted by the addicts themselves.

*Key words:* Opiate detoxification; Midazolam; Naltrexone

### 1. Introduction

One of the main objectives in the treatment of opiate addiction is abstinence (Group for the Advancement of Psychiatry, Committee on Alcoholism and the Addictions, 1991). However, many detoxification procedures take more than 10 days to complete (Strang et al., 1988; Kosten et al., 1939; Kosten et al., 1991; Plan Nacional sobre Drogas, 1991). Such treatments are often costly. They may also be frustrating because of high drop-out rates. For inpatient detoxification this ranges between 20-30% (Plan Nacional sobre Drogas, 1991; Stark, 1992) and for out-patient detoxification it may be as high as 80% (Gossop et al., 1986; Stark, 1992).

Detoxification methods may involve drug replacement, using an opiate agonist such as methadone (Gossop et al., 1989) or partial opiate agonists such as buprenorphine (Jasinski et al., 1978). Another approach involves the use of adrenergic agonists such as clonidine or guanfacine (Gold et al., 1978; Shubert et al., 1984). There has also been recent interest in blockade

treatments using opiate antagonists such as naloxone or naltrexone in conjunction with adrenergic agonists (Riordan and Kleber, 1980,- Charney et al., 1986). This has sometimes been done in conjunction with benzodiazepine induced anesthesia (Loimer et al., 1991). Such detoxification procedures for heroin addicts have sometimes been completed within a short period of time, e.g. between 48 h and 4-5 days (Brewer et al., 1988; Vinning et al., 1988).

One problem in detoxification (especially with methadone replacement) has been the protracted withdrawal response. This may persist for weeks after the detoxification procedure has been completed (Gossop et al., 1989). The use of antagonists permits important reductions in the duration of the detoxification process (Kosten et al., 1989) whilst maintaining withdrawal symptoms at tolerable levels for the subject (Loimer et al., 1991).

The present study investigates the responses of heroin addicts to an ultra-rapid (24-h) procedure using anesthesia, for the detoxification of polydrug users addicted to heroin. Treatment was carried out on an intensive care unit.

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### 2.1. Subjects

Eleven male heroin addicts were detoxified during a three-month period between October and December 1992. Their mean age was 26.5 years (S.D. = 4.6) and all were addicted to heroin according to DSM III-R criteria. The mean duration of heroin addiction was 6.5 years (S.D. = 5) and the mean daily amount of heroin consumed during the previous week was about one quarter of a gram (0.242 g.; S.D. = 0.297). The mean number of previous detoxification treatments was 3.1 (S.D. = 2.3). Other drug use included cocaine (2 were daily users and 6 were occasional users), benzodiazepines (5 occasional users), and alcohol (2 daily users and 3 occasional users). Four of the subjects were married and 7 were single; 8 were in occasional employment and 3 were unemployed.

All subjects and a close relative signed an informed consent which explained to them the possibility of a respiratory and/or cardiac depression during the detoxification procedure. None of the subjects presented contra-indications for the application of this treatment. The complementary analytic examination also included: full hematology ESR; PT and PTT; urea; glucose; uric acid; TGO; TGP, bilirubins; ALK Phos and Gamma-GT.

### 2.2. Procedure

During the first (pre-admission) interview a full psychological and medical examination was carried out and subjects were requested not to take heroin from that night. Next day at 09:00 h the subjects were admitted to the clinic. Throughout the morning the analyses were made and repeated doses of guanfacine 1-2 mg/h were administered until reaching a B/P < 90/60 mm Hg and a pulse rate of < 55 bpm. At 12:00 h patients were transferred to an intensive care unit where an oral dose of the opiate antagonist naltrexone (50 mg), was administered. At this time, in order to avoid diarrhoea and vomiting during detoxification they were administered oral doses of loperamide (4 mg) and ondansetron (8 mg). Immediately afterwards the patient was given an intravenous injection of midazolam (0.5-0.7 mg/kg) to induce sedation. The midazolam was administered with a constant perfusion, adjusting the dose in accordance with the individual's response.

When the subject no longer showed signs of opiate withdrawal (primarily piloerection, sneezing, and motor agitation), usually 4 h after sleep induction, a naloxone test was performed (0.8 mg) i. v. During the sleep phase blood pressure was monitored hourly with a Riester automatic cuff manometer and heart rate was monitored continuously with an EKG Drager (Model 3M-102). On coming round the subject continued to receive guanfacine in decreasing doses. On discharge the following morning, they were administered 50 mg of naltrexone

which they instructed to continue taking daily under the supervision of a close relative and over at least a 3-month period. Both before sedation and before being discharged from clinic all subjects completed the Opiate Withdrawal Scale (Bradley et al. 1987). As part of the therapeutic programme, all the subjects attended the out-patient treatment centre once a week during the following 4 weeks after their discharge from the clinic.

### 3. Results

All subjects were closely monitored during sedation, while they were being detoxified. During this phase all subjects presented slight psychomotor agitation, piloerection and sneezing fits. No other clinical incidents of interest were observed. Levels of opiate withdrawal symptomatology were found to be at normal, baseline levels after detoxification. The Opiate Withdrawal Scale showed significant differences ( $t = 4.2$ ,  $P < 0.001$ ; one-tailed paired  $t$ -test) between the results of the questionnaire filled in before detoxification ( $X=17.7$ ; S.D.=12.9) and those after detoxification ( $X=2.7$ ; S.D.=3.9). Moreover, in response to the administration of 50 mg of naltrexone, the morning after detoxification, there were no physical signs or subjective responses to indicate the presence of opiate withdrawal symptoms. In the follow-up 30 days after finishing detoxification all subjects were still taking naltrexone. All but two were known to have challenged naltrexone on one occasion.

### 4. Discussion

This study involved an open trial with a small subject sample. For these reasons caution should be used in interpreting the results. However, all 11 heroin addicts were successfully withdrawn from drugs within a very short period or time using this detoxification procedure.

The duration of treatment from admission to discharge was only 24 h and the active detoxification process itself lasted only 4 h. Withdrawal symptoms were observed only, under sedation and no physical signs or symptoms were reported upon waking when Opiate Withdrawal Scale scores were at normal baseline levels (Bradley et al., 1987). After treatment (12 h), the administration of 50 mg of naltrexone provoked no withdrawal response. All subjects were maintained on naltrexone after detoxification. Despite the fact that all but two had challenged this by taking heroin, all had continued to take naltrexone and were abstinent from opiates 30 days after detoxification.

These results are encouraging. A very short detoxification procedure of this sort may have considerable value, especially if it enables patients to be successfully inducted into an opiate antagonist programme. In Spain, as in other countries, hospital inpatient detoxification programmes are often confronted by substantial

drop-out rates. In Spain the drop-out rate is typically about 32% and an average length of stay for programme completers is about 12 days (Plan Nacional sobre Drogas, 1991). In contrast to traditional detoxification programmes which may involve inpatient admission of 10 days or more, the rapidity of the procedure described in this paper may be attractive. In comparison with outpatient detoxification programmes where treatment drop-out rates of up to 80% are often found (Gossop et al., 1986; Stark, 1992), the possibility, of a completion rate of up to 100% may also be seen to be very attractive.

A small-scale trial of this sort cannot fully establish the safety of this intensive procedure and further studies will be required to determine the possible associated risks. However, in the present study no adverse physical or psychological effects were observed.

An intriguing feature of this procedure is that the addict is sedated during withdrawal and therefore does not consciously experience any symptoms of opiate withdrawal. Fears and anxieties about withdrawal may deter some addicts from seeking treatment and such factors can also increase the level of distress experienced during withdrawal (Phillips, Gossop and Bradley, 1986). The prospect of having to experience any withdrawal symptoms may make the procedure described in this paper non-threatening to addicts. Many of the addicts in the trial expressed their enthusiasm for this aspect of the treatment. It is unclear how the avoidance of consciously having to experience the withdrawal syndrome could be expected to affect broader aspects of the addict's motivation for treatment, but further studies might also address this question. In our center (Seville) we are researching how to simplify the present procedure regarding the number of drugs used as well as how to shorten the time lapse necessary between the addict's last dose and the commencement of detoxification.