

Treatments for heroin addiction

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Developments in the treatments for heroin addiction have recognized the importance of combining pharmacological and psychosocial interventions to provide comprehensive or holistic intervention and ensure better results. The treatment for heroin addiction also coincides with the stages of addiction so that during the initiation of use and continuous craving for heroin, the treatment is crisis intervention. In the stages of detoxification and relapse, the treatment is cure of heroin addiction, patient care, and cure of co-occurring physical and mental disorders.

In crisis intervention, naloxene is used for non-fatal overdose while methadone or buprenorphine together with cardiopulmonary resuscitation for fatal overdose. In the cure for heroin and patient care, opioid-antagonist drugs such as methadone buprenorphine, naltrexone or naloxone are used as well as α_2 -adrenergic agonists such as clonidine, lofexidine. Vaccines that prevent the penetration of heroin into the blood-brain barrier are also being developed. In the cure of co-occurring conditions such as depression, HIV/AIDS, or psychosis, the drug treatment depends on effectiveness, combination effects, and side effects.

In all these phases, psychosocial interventions through counseling, therapy and community programs as well as prescription and supervision over the drug treatment enhance results. The different treatments for heroin addiction depend on the stage of addiction and the co-occurring condition of the patient. Addiction to heroin develops in four phases. First is the initiation phase with μ -opioid receptors and dopamine serve as reinforcements to drug abuse. Second is the continuous use and craving for heroin that involves

various neurotransmitters including μ -opioid receptors, dopamine, corticotrophin-releasing hormones, and glutamate.

The treatment in the first and second phases is crisis intervention intended to prevent and reverse overdoses. Third is detoxification together with withdrawal phase involving norepinephrine and glutamate. Fourth is the relapse into heroin use after a period of abstinence with norepinephrine and corticotropin-releasing hormones playing a role in brain stress and γ -amino butyric acid and glutamate playing an important role in the compulsion towards relapse.

Treatment for phase three and four involve cure of heroin addiction by addressing symptoms arising during the detoxification and relapse, patient care to normalize physiological functions, and cure of co-occurring physical or mental disorders. (van den Brink & van Ree, 2003a) Crisis intervention involves various interventions. In the case of non-fatal overdose, naloxone, which is a short-acting opioid-antagonist is recognized as effective in the treatment of respiratory depression and even coma in the case of patients experiencing heroin overdose (van den Brink & van Ree, 2003b).

Administration of naloxene can be made through intravenous or subcutaneous routes since studies show no significant difference in results (Clarke, 2001). This supports peer administration of naloxene for heroin addicts in preventing fatal overdose (Lenton & Hargreaves, 2000). With regard to fatal overdose, cardiopulmonary resuscitation also helps as an intervention to prevent fatal overdose (Dietze et al. , 2002).

However, an effective preventive treatment for fatal overdose is opioid-assisted interventions such as the maintenance of buprenorphine or methadone intake (van den Brink & van Ree, 2003b). Cure of heroin addiction involves the initial phase of detoxification that involves withdrawal from the use of heroin and the latter phase of relapse prevention that covers the maintenance of abstinence from heroin. During detoxification, methadone and buprenorphine are the primary pharmacological treatment. Methadone is an orally administered drug while buprenorphine is a sublingually administered drug.

A review of studies show that both methadone and buprenorphine offers detoxification treatment benefits but the preference of some studies for methadone is its effectiveness while the preference for buprenorphine is its safety. Currently, there are no patient characteristic standards to determine the choice of medication so that factors such as availability, cost and convenience in administration apply in determining choice of treatment (Bigelow, 2005) Apart from these two medications, α_2 -adrenergic agonists, clonidine or lofexidine, could also support detoxification.

Preference weighs in favor of lofexidine because of the lesser occurrence of hypotension so that this becomes a fitting substitute for methadone when this is not available in the prison context (Howells et al. , 2002). Moreover, increasing the period of detoxification is made through naloxone and/or naltrexone administered without anaesthesia or with heavy or full anaesthesia. Combining naloxone and/or naltrexone with α_2 -adrenergic agonists would improve and speed-up the detoxification process especially when nearing the maintenance phase.

There are withdrawal episodes but these are easier to resolve when occurring in the combined treatment than in the use of α_2 -adrenergic agonists alone. (Kosten & O'Connor, 2003) Administration of clonidine with naltrexone, followed by buprenorphine after stabilization has been found to lead to lesser withdrawal symptoms in patients (O'Connor et al. , 1997). In the case of anesthesia, the combination of anesthetics with drugs remains experimental with some studies finding no significant impact of anesthetics on detoxification (van den Brink & van Ree, 2003a).

In relapse prevention, the existing treatment uses opioid antagonists, such as naltrexone. However, effectiveness found little evidence from studies because most patients often withdraw from treatment after the withdrawal phase (Kirchmayer et al. , 2002). This means that naltrexone may be effective as treatment in preventing relapse in people committed to continue treatment until complete withdrawal. Naltrexone has also been found to lead to lesser withdrawal effects on pregnant women when compared to methadone (Hulse & O'Neill, 2002).

There are also other issues arising in the use of naltrexone such as the possibility of inducing depression together with the possibility of overdose upon the discontinuation of this drug treatment (Ritter, 2002). This means the need to inform or warn patients regarding these issues. A developing treatment to prevent relapse are vaccines designed to raise antibodies that stop certain addictive substances such as heroin from penetrating blood-brain barrier and prevent relapse during the phase of abstinence (Bunce, 2005). However, this remains in the experimental stage.

In patient care, the purpose is to stabilize the condition of the patient and reduce harm. Patient care could involve maintenance programs assisted by opioids such as methadone or buprenorphine, needle exchange programs, and user rooms. Opioids support treatment when administered in the right dosage and increasing the dosage of opioids could entail better effects (Johnson et al. , 2002) so that together with the provision of psychosocial support, such as counseling, therapy and community programs, effectiveness is ensured together with a lower risk of premature withdrawal from the treatment program (Preston, Umbricht, & Epstein, 2000).

In addition, prescription and supervision over the drug treatment have been found to increase the retention of patients for the completion of the treatment program (Ferri, Davoli, & Perucci, 2003). Integrating psychosocial support and supervision with the appropriate combination of drugs and drug dosage constitutes sound patient care for heroin addiction. In the cure of co-occurring physical and mental disorder depends on the condition of the patient. Conditions that can co-occur with heroin addiction are depression, HIV/ AIDS or psychosis.

Again, in this area, a combination of pharmacological and psychosocial support interventions is necessary to provide a complete treatment for heroin addiction. The consideration of the effectiveness of drugs, reaction with other drugs, and safety of the combined intake of different drugs together with the physical and mental impacts of the combined treatment deserve consideration in the determination of the particular treatment for heroin addiction of individual patients. (van den Brink & van Ree, 2003a)