

Drug misuse: a review of treatments

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ABSTRACT – Treating drug users is something that every health professional should be able to do, whether providing brief interventions or harm minimisation advice or providing an assessment and directing the user for further care. Unfortunately, despite a growing problem, few health professionals outside specialist addiction services have the skills, experience and knowledge to provide patients with effective pharmacological interventions. Many of the pharmacological treatment options, such as methadone maintenance, have had extensive research and have been shown to be effective in a number of outcome areas. Newer treatments, such as buprenorphine- and naltrexone-assisted detoxification have a growing research base. This article provides a brief overview of treatments options and the impact of drug use on social and medical care services.

KEY WORDS: buprenorphine, methadone, naltrexone, opiate, treatment

Despite the high prevalence of drug misuse, few doctors have received any training in the area.¹ The impact that a doctor or other health professional can make, even after brief contact with a drug user, can be powerful and long lasting. When done well, a clinician can begin the process of change towards a drug-free state; at worst, contact with a health professional can leave the user feeling even more marginalised and even less likely to approach health services for help. This article reviews the concept of treatment in its broadest sense and the range of interventions a healthcare professional can offer.

Impact of drug misuse on health and social services

Drug misuse is associated with harm to the individual, their families and the community as a whole. It is hardly surprising, therefore, that most health and social services have contact with drug users, though perhaps the greatest impact is felt in the following areas.

Accident & emergency (A&E). The National Treatment Outcome Research Study (NTORS) assessed a national cohort of drug users coming into

treatment services. Half of the cohort reported attending A&E in the two years prior to treatment; the most common reason was drug overdose, but other forms of physical and psychiatric complications would also have presented.²

Obstetrics, women's health and maternity. Around one in three drug users attending treatment services are women and most of these are of childbearing age.³ Babies born to women who use drugs are at greater risk of being born prematurely or small for dates and, if exposed to opiates, the infants risk neonatal addiction and withdrawal.

Primary care. A national survey of English GPs estimated that at least half of all GPs had seen a drug user in the previous four weeks, and half of these GPs had prescribed substitution medication to four patients on average.⁴

Mental health (adult, child and adolescent). It is estimated that 30% of patients attending community mental health services have substance misuse problems co-existing with mental health problems and are more likely to have prolonged stays in hospital. There are increasing concerns around issues of adolescent mental health and drug use. Rates of drug use among young people are reported to be increasing.⁵

General medicine. It is estimated that 25% of general hospital admissions are alcohol related and a significant proportion of these are likely to be a combination of drug and alcohol misuse. The NTORS study² reported that 25% of patients had received treatment requiring admission to a general hospital over the two years prior to entering drug treatment services. If this

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Key Points

Drug misuse is a common problem

Drug misuse is a treatable condition

Methadone maintenance treatment is an effective treatment for opiate addiction and improves outcomes in a number of clinical, social and criminal justice domains

The use of buprenorphine for maintenance substitution in opiate addiction has a growing and encouraging evidence base

were reflected in the population as a whole, it would amount to approximately 50,000 admissions a year.

Child protection. An estimated 200,000–300,000 children in England and Wales live in households where one or both parents have serious drug problems, and only 37% of fathers and 64% of mothers were living with their children.⁶ Though serious drug use does not automatically diminish the capacity to parent, it increases the potential for negative family processes and disrupted lives.⁷

Genitourinary medicine. Individuals attending sexual health services have a high rate of alcohol and/or drug misuse.

Homelessness services. More than half of homeless individuals have substance misuse problems.⁸

General principles of treatment

Drug users are a heterogeneous group of people and treatment services should be flexible enough to meet these differences whilst adhering closely to evidence-based and effective guidelines. The general principles of treatment are outlined in Table 1.

Aims of treatment

The NTORS study² showed that drug treatment providers have a range or hierarchy of inter-related goals with respect to drug treatment. These include:

- reduction of psychological, social and other problems related to drug use
- reduction of psychological, social or other problems not directly attributable to drug use
- reduction of harmful or risky behaviour associated with the use of drugs, including sharing equipment
- attainment of controlled, non-dependent or non-problematic use
- abstinence from main problem drug(s)
- abstinence from all drugs.

Drug treatment services in the UK have largely concentrated on those who inject opiates, and have mainly used methadone-based interventions. Those whose primary drugs of misuse are stimulants, such as amphetamines or cocaine, or hypnotics, such as benzodiazepines, have, in the absence of clearly effective pharmacotherapies, received less well developed services.⁹

Specific treatments

Opiate substitution

Abstinence is the overall aim of treating drug users. There is an undoubted evidence base for the effectiveness of methadone treatment in helping patients achieve abstinence. Equally, although abstinence is the goal, it is rarely achieved and

methadone maintenance is important in enabling individuals to function, as well as in reducing the rate of criminal behaviour. The evidence for methadone as an effective adjunct to treatment dates from nearly 40 years ago,¹⁰ when it was the first effective outpatient intervention for heroin addiction.

Table 2 summarises the pharmacological interventions for opiate users.

Opiate detoxification programmes

In these programmes, an individual who is physically dependent on an opioid drug is taken off that drug, either abruptly or gradually, in order to eliminate physical dependence with the minimum of discomfort from withdrawal symptoms.¹¹ Detoxification is carried out using the drug to which the patient is addicted in gradually decreasing doses, or using related drugs that provide effective chemical substitution. Other medication may be used to provide relief from withdrawal symptoms. In the UK, methadone and lofexidine (and in some cases clonidine) are most commonly used for opioid dependence. There is some evidence for the effectiveness of lofexidine, although the Cochrane Review concluded that although clonidine and lofexidine were as effective as methadone when used for detoxification over a ten-day period, participants stayed in treatment longer with methadone and experienced fewer side effects.¹²

Detoxification alone cannot be expected to lead to long-term abstinence, and there need to be substantial changes in other outcomes such as employment, criminality or general health. It is therefore best conducted as a precursor to treatment.⁹

Studies in the USA examining detoxification-only treatment outcomes^{13,14} found that the detoxification-only cohort had the

Table 1. General principles of treatment.

- 1 No single treatment is appropriate for all individuals.
- 2 Treatment needs to be readily available, and begin when the user presents.
- 3 Treatment should address the multiple needs of the individual, over time including their physical, psychological, social and educational needs.
- 4 Treatment modalities used will change over time and at different times during treatment.
- 5 Remaining in treatment is most predictive of a good outcome.
- 6 Substitute medications, such as methadone or buprenorphine, are an important element of treatment for many patients, especially when combined with counselling and behavioural therapies.
- 7 Patients with coexisting problems, such as mental health problems, should have these treated alongside their drug misuse problems.
- 8 Treatment does not need to be voluntary to be successful.
- 9 Recovery from drug addiction takes time. Addiction is a chronic, relapsing condition often requiring multiple episodes of treatment.
- 10 Treatment should be provided by trained and competent clinicians.

poorest outcomes in all measured categories, compared to patients on methadone maintenance, residential rehabilitation and drug-free programmes.

Both rapid and ultra-rapid detoxification treatments have a place for patients who wish to accelerate the detoxification process. However, at the time of writing, both these treatments are largely unavailable on the NHS; they have not been the subject of robust research and they remain controversial.^{15,16}

Methadone maintenance

Methadone is the drug most widely used for long-term prescribing or maintenance in opioid addiction. When used orally it causes a minimal 'high' and lasts long enough in the body for once daily dosing.

In methadone maintenance treatment, the drug is prescribed on the understanding that it will be provided on a non-reducing basis following stabilisation on a suitable dose. In the USA, methadone maintenance treatment is typically delivered by clinics which dispense oral preparations of methadone for consumption under supervision. Patients attend the clinic daily unless they have 'earned' take home privileges. Treatment in the UK has traditionally been delivered by specialists, but increasing numbers of patients are now treated by their GPs, under a model of treatment called 'shared care'.¹⁷ The UK national clinical guidelines¹⁸ recommend daily supervised ingestion and oral methadone, but research suggests that this is not common practice.¹⁹

Evidence is growing^{20,21} that higher doses of methadone, in

the region of 60–120 mg per day, are more effective than lower doses,²² and these are recommended by the National Treatment Agency.²³ There is little doubt now that methadone maintenance treatment not only reduces illicit drug use but also the criminal activity that accompanies drug-seeking behaviour; it lowers the risk of HIV infection and its associated mortality and morbidity; and it improves social functioning. Overall, such treatment of opiate addiction is as successful as treatment of other chronic diseases such as diabetes, hypertension and asthma. Drug treatment reduces drug use by 40–60% and arrests for violent and non-violent criminal behaviour by as much as 50%.^{3,24} For every £1 spent on treatment, £3 is saved in criminal justice costs. Furthermore, patients who have been coerced into treatment, for example through Drug Treatment and Testing Orders (DTTOs), show the same changes and improvements as those who have entered treatment through the more traditional voluntary route. DTTOs were introduced as a new community sentence under the Crime and Disorder Act 1998 in response to growing evidence of the link between problem drug use and persistent acquisitive offending.²⁵

Buprenorphine

Buprenorphine is a newer treatment which is probably as effective, having partial agonist/antagonist effects. It is safer in overdose and reported by patients to be easier to give up. Randomised trials suggest that buprenorphine exhibits comparable efficacy to methadone as substitution maintenance medication when used in

Table 2. Treatment modalities and pharmacological interventions for opiate users.

Detoxification – implies ultimate aim is abstinence

Slow

- Self-detoxification involving reducing illicit heroin use over time
- Using non-opiate based symptomatic treatments, such as clonidine, lofexidine, lmodium, diclofenec, temazepam
- Using gradually tapering doses of methadone
- Using buprenorphine

Usually involves the patient withdrawing from opiates over a number of days or weeks. The patient may be placed on naltrexone after the detoxification process is complete – usually at least 5 days after last opiate use.

Rapid

Using a regime of symptomatic treatments and patient is given variable levels of sedation

Process of accelerating acute withdrawal from heroin or other opiates by administration of an opioid antagonist, whilst providing symptomatic relief to enable the patient to tolerate the procedure. Done as an outpatient or inpatient procedure depending on the level of sedation. Patient can be prescribed naltrexone to start at least 5 days after last opiate use.

Ultra rapid

Similar to rapid but the patient is anaesthetised and rapid opiate withdrawal instituted through the use of naltrexone

Carried out in an inpatient setting

Maintenance – usually implies stable prescribing for a period of over 6 months

Methadone

Considered to be the 'gold standard' for opiate substitution

Buprenorphine

Newer treatment in UK and potentially very useful

Relapse prevention

Naltrexone

Usually taken orally and blocks the effects of opiates for up to 72 hours

equivalent doses, and its place as an alternative treatment for some patients with opioid addiction looks promising.²⁶ Much of the emerging evidence derives from other European countries; in the UK evidence for its efficacy is limited and based on few studies.

Naltrexone-supported abstinence

Reviews of the effectiveness of naltrexone, the most commonly used pharmacological treatment in relapse prevention, have not been entirely favourable, though effectiveness has been demonstrated in some studies,²⁷ especially in highly motivated patients.

Predictors of outcome of treatment

Factors associated with good outcome are related to the service itself, such as minimising barriers to entry, having well trained staff and a service committed to providing high-quality medical and psychosocial services.

Dose

Other factors which improve outcome are related to the actual treatment given, in particular providing optimal daily doses of substitute medication. In determining the dose, the priority is to control withdrawal symptoms and to negate or minimise any euphoria gained from taking additional illicit heroin, so-called 'heroin blockade'.²⁸ In this respect, higher methadone doses tend to be more effective than lower doses and it is inappropriate to insist on arbitrary ceiling doses.^{22,29} For buprenorphine, the efficacy of maintenance treatment, in terms of retention in treatment, reducing craving and reduction of use of illicit drug, appears to be dose related.³⁰

Length of time in treatment

Individuals progress through drug addiction treatment at various speeds, so there should be no predetermined length of time in treatment. However, research has shown unequivocally that good outcomes are contingent on adequate lengths of treatment. For methadone maintenance, 12 months of treatment should be seen as the minimum, and some opiate-addicted individuals will continue to benefit from methadone maintenance treatment over a period of years. Many people who enter treatment drop out before receiving all the benefits that treatment can provide. Successful outcomes may require more than one treatment experience; many addicted individuals have multiple episodes of treatment, often with a cumulative impact.

Problems associated with opiate substitution treatment

Opiate substitution, especially with methadone, cannot be seen as a panacea. Some consider that giving patients an addictive substitute merely perpetuates the addiction. Methadone can be diverted to others, especially if prescribed for more than daily dispensing or in its tablet form, both of which are contrary to the current national guidelines.¹⁸ About one-tenth of all prescriptions dispensed in England and Wales were for tablets

(which can be crushed and injected) and about one-tenth for injectable ampoules.¹⁹ Irresponsible prescribing by GPs has been implicated in high levels of drug-related deaths,³¹ and GPs' largely unregulated prescribing has more potential for diversion.

Opiate substitution alone is unlikely to be effective: 'a dose of methadone has no magical effect on personality, job skills, or support systems of a drug abuser'.³² Programmes that offer little in terms of counselling, employment support or training in the relapse prevention part of treatment are unlikely to produce significant changes in social functioning.

Treatment for stimulant misuse

Amphetamine misuse is rising in the UK³³ and can cause dependence. A report produced for the Department of Health found that amphetamine misusers seeking treatment had a number of interrelated problems and difficulties, including:³⁴

- physical health problems (40% of sample)
- psychological health problems – paranoia, aggressive behaviour, suicidal ideas
- breakdown and deterioration in social relationships
- a loss of control leading to panic and depression.

Treatments available include counselling, healthcare for physical and psychological symptoms and, very occasionally, in specialist units, amphetamine-substitute prescribing. Use of amphetamines as substitute drugs is controversial and there is little research to support it. The national clinical guidelines¹⁸ recommend that substitute prescribing of amphetamines be limited to those who habitually take large amounts of amphetamines (over 1 g per day), injecting users, and users where attempts to withdraw in the past have failed.

One study evaluated the success of a dexamphetamine-prescribing programme in 26 patients.³⁵ This programme comprised daily supervised dispensing, and a follow-up after an average of 15 months treatment found improvements in the subjects' overall behaviours, with over half ceasing to inject and a marked reduction in injection frequency.

There is, however, very little evidence for the effectiveness of amphetamine prescribing and hence it should be undertaken with great caution.

Cocaine

Treatments for cocaine and crack cocaine (a smokable form of cocaine) users comprise counselling, chemotherapy (in the form of antidepressants) and, very rarely, substitute prescribing. Cocaine users often present in acute crises and require a service able to respond to their needs. The majority of individuals seeking treatment smoke crack, and are likely to be multiple drug users. Cocaine abuse and addiction is a complex problem involving biological changes in the brain as well as a number of social, family and environmental factors. Treatments for cocaine addiction are therefore complex and must address a variety of problems.

A review of the evidence for the pharmacological treatments

for stimulant users concluded that 'there are precious few effective pharmacological treatment options'.³⁶ This is supported by a number of Cochrane reviews, showing that current evidence does not support the use of dopamine agonists, carbamazepine or antidepressants, with the possible exception of short-term fluoxetine.^{37,38}

Conclusion

This brief article has attempted to provide an update on treatments for drug dependence, predominantly opiate addiction. It is by no means a comprehensive review and does not include, for example, a discussion of the numerous and effective talking therapies, or the value of therapeutic or rehabilitation services available. Treatment must embrace all these modalities if it is to be successful. Used appropriately, treatment for drug dependence works.

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