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Managing amphetamine dependence

Malcolm Bruce

> "Appropriately controlled and structured clinical trials have not yet revealed any pharmacological approach for rehabilitation of stimulant dependent individuals for which the risks have been shown to outweigh the assets." (Schuckit, 1994)

This statement remains true today. In addition, the absence of a strong research base is not confined to drug treatments (Myles, 1996), leaving little with which to make evidence-based recommendations to help this service user group. Nevertheless, this is the second article in the last three years commissioned by *Advances in Psychiatric Treatment* (APT) into amphetamine misuse, the first being that of Seivewright & McMahon (1996). Their view, still applicable in 1999, expressed the concern that, in the perception of drug services, there is a hidden epidemic of amphetamine users, in which the heaviest users experience many of the same problems as heroin users, without receiving similar treatment. Regional drug databases, police charges, custom seizures and community surveys all indicate that amphetamines are the most prevalent illicit drugs after cannabis. In addition, from a general psychiatrist's perspective, there has been a steady growth of illicit drug use (including amphetamines) over the last 20 years, and this is now making a significant impact on all groups within the community, including the psychiatric population. In one example, a recent London community sample of patients with schizophrenia showed that 63% were using illicit drugs, 33% of whom were doing so covertly and were only detected by hair analysis (McPhilips *et al*, 1997).

When faced with a lack of evidence-based interventions but increasing numbers of patients requiring treatment, it seems prudent to retreat into clear definitions of the issue and consensus documents on how to manage the problem.

Dependence as used in the title and as applied to patients requiring the treatment options given in this article is defined by the ICD–10 (World Health Organization, 1992) as indicated in Box 1. Although the dependence syndrome was developed primarily in relation to alcohol misuse, the applicability of the dependence syndrome to amphetamines has been validated recently (Topp & Darke, 1997). The use of the ICD–10 diagnosis is of more benefit than just the definition of a homogenous group of patients with predictions for treatment and outcome. It also moves the concept away from the moral plane, which is important if psychiatrists are going to help patients who are carrying out illegal activities. These activities carry risks and patients are asking for professional help, which in the first instance can

Box 1. Diagnostic guidelines for the dependence syndrome

Three or more of the following should be present together at some time during the previous year:

A strong desire or sense of compulsion to take the substance

Difficulty in controlling substance taking behaviour in terms of its onset, termination or level of use

A physiological withdrawal state when the substance use has ceased or been reduced

Evidence of tolerance

Progressive neglect or alternative pleasures or interests

Persistence with substance use despite clear evidence of overtly harmful consequences

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be as simple as raising the patient's awareness about those risks.

For the purposes of this article, I am also confining 'amphetamines' to refer to amphetamine sulphate powder that is primarily produced in the UK by illicit manufacture and has a purity of approximately 5% on the street, known as 'speed' or 'whizz'. Related compounds such as cocaine, crack or ecstasy are not included.

The guidelines on clinical management of drug misuse and dependence (Department of Health (DoH), 1991) were clear in terms of medical intervention aims, and did not change markedly in the revised edition (DoH, 1999). These aims are to treat medical and psychiatric complications of substance misuse, reduce the risks of further drug use (harm reduction) and support the patient in their goal of abstinence. The only specific guideline relating to amphetamines is the recommendation "to discontinue illicit amphetamines abruptly as there is no advantage in gradual withdrawal" (DoH, 1991). It is also stated that it is undesirable to prescribe stimulant drugs – as the risk of them being misused is very high. The new edition of the guidelines (DoH, 1999) is less definite in this area, reflecting UK practice and open-study reports, and is discussed later in this article. The management of withdrawal is symptomatic. Patients may complain of insomnia or depression, which requires treatment, usually as out-patients, but, occasionally, if they become overtly suicidal, as in-patients. Otherwise, the management is along general principles, which apply to any substance of misuse.

As the title suggests, managing this problem does not involve a brief detoxification and discharge, but rather a medium- to long-term commitment to help the patient move away from illicit drugs.

From the epidemiology of amphetamine misuse, it is clear that the majority of experimental and recreational users do not progress to dependence, and even of those who do, some subsequently withdraw from amphetamines without professional intervention. However, some do continue to relapse into illicit amphetamine use, and the difficulties they have faced give us a clue about where subsequent management should be directed. Cantwell & McBride (1998), in a study of dependent amphetamine users who relapsed following self-detoxification, showed that the most common reasons for electing to go into withdrawal were dissatisfaction with their lifestyle, concern about their mental health, family pressures and their physical health. As for relapse, the most frequent causes were the easy availability of drugs, severity of withdrawal symptoms (primarily depression), boredom with a drug-free lifestyle, peer pressure and enjoyment of the drug. From this, it can be suggested that interventions should continue to raise awareness about the reasons to elect to withdraw, with continued targeting of the causes of relapse (relapse prevention). This may include limited pharmacological interventions.

The development of specialist drug services for drug misusers has primarily concentrated on opiates because these patients are attracted to treatment by substitute prescribing, which has a sound evidence base. With the increasing numbers of opiate-dependent patients, other drug users (including amphetamine users) have been neglected. Indeed, if not for the early evidence from Needle Exchanges suggesting extremely high use by amphetamine users (in some cases higher use of their service than heroin users), many specialist services would not be aware of the local problems. It is only when complications set in that amphetamine users present to services, but not typically to specialist services in substance misuse (see Box 2).

Within psychiatry, because of the general psychiatric complications, these patients usually present in general psychiatric settings, and it is therefore important that general psychiatrists have a low index of suspicion and high detection rate for substance misuse disorders, including amphetamines. In cases where it complicates other primary psychiatric diagnoses such as schizophrenia, the management of drug dependence, specifically amphetamine dependence, is likely to lead to an improved treatment outcome if their substance misuse problem is treated concurrently. To maintain a high index of suspicion concerning substance misuse, repeated awareness raising for psychiatrists is required. This article may contribute to the maintenance of that vigilance. Clear detection and

Box 2. Complications of amphetamine misuse

Medical

Cardiovascular – hypertension, arrhythmia, haemaglobin, cerebrovascular accident

Infective – abscess, hepatitis B and C, septicaemia, human immunodeficiency virus (HIV)

Obstetric – reduces foetal growth, miscarriage, placental abruption, premature labour

Other – weight loss, dental problems, epilepsy

Psychiatric

Anxiety, depression, antisocial behaviour, paranoid psychosis

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diagnosis require full assessment as outlined below. However, behavioural change and symptoms such as increased energy, elation, reduced appetite, weight loss, overactivity, confusion and paranoia may all indicate the current use of amphetamines. An absence of amphetamines in regular users will also result in depression, craving, irritability and hypersomnia, which should also suggest a need for a full drug assessment. The minority practice of excluding patients with mental illnesses who use drugs from general psychiatric services needs to be challenged.

Prior to expanding on management, reference needs to be made to the differing understandings of the process of drug misuse and the variable service contexts that are found around the country. In an earlier article in APT, Farmer (1997) outlined models of substance dependence and the network of services available. She recommended that clinicians, when practising, should be aware of the main models and be flexible enough to exploit the advantages of each in different patients at different times. The patient's beliefs about his or her addictive behaviour would be an important consideration. If, for instance, a patient has accepted the Alcoholics Anonymous model, the best treatment outcome is likely if the therapist – even if his or her theoretical leanings are behavioural – does not disabuse the patient of his or her views.

The network of local services will determine which are most appropriate to meet the individual needs of the patient, and, with the implementation of a care package, it may be that where local services are well-developed, the psychiatrist is left with a coordinating role. Over the last two years, the local medical service network has developed increasing involvement of primary care in the 'shared care' model. It is envisaged that there will be three layers of service. The first, primary care, the second, specialist general practitioners in drug misuse and finally, specialist psychiatrists (some of other disciplines). This structure will develop to variable extents geographically, and a knowledge of local services is required to optimise the most effective and efficient management of the local drug misuse problem and individual patients. For the patient with comorbid amphetamine misuse and severe mental illness, the service structures delivering care also vary nationally and, at the current time, there is no agreement on which provide the optimum package (Johnson, 1997). Local knowledge of service provision is essential, and as an interim measure there should be the establishment of a local protocol on how to manage these patients until a time when research can inform on which service model provides the best outcome. Without management protocols, these patients will remain on the margins of psychiatric services, and their poor adherence, sometimes violent behaviour and social instability will continue to lead professionals to define them as 'difficult patients' – which may in turn affect the quality of service they receive. Clear lines of responsibility of care need to be agreed.

The management, then, of amphetamine dependence can be divided into three sections: assessment; management of dependence; and preventing relapse.

Assessment

The assessment, which is common to all cases of drug misuse, is outlined in Box 3. This process needs to be seen as more than just a check-list to establish the diagnosis. It also establishes the patient's perceptions of his or her drug-taking behaviour. This is fundamental to the future application of appropriate interventions. Further elaboration is available in the drug misuse guidelines (DoH, 1999).

This process should identify all experimental and recreational users of amphetamines. If amphetamine use at this level is detected, psychiatrists should give factual information about the risks of injecting amphetamines while being careful to avoid overstating the dangers of oral use. Those users who indicate that they intend to continue to use the drug should be given simple advice on less harmful methods of administration and frequency of use (Hall & Hando, 1993). When this level of amphetamine use is accompanied by another primary psychiatric diagnosis (comorbidity), either secondary to or independent of amphetamine use,

Box 3. Areas of emphasis for history examination and investigation in assessment

Drug use and previous treatments including ICD–10 criteria (as outlined in Box 1)
Areas of conflict: relationships, jobs, debt, the law
Support structure
Mental state
Objective signs of withdrawal
Needle marks
Urine toxicology
Comorbid physical and mental conditions, e.g. HIV

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then more assertive interventions are necessary. These are outlined below for the dependence syndrome when patients are still using drugs. Failure to address amphetamine use in comorbidity, even when use does not qualify for inclusion as the dependent syndrome, will result in increased rates of violence, suicide, non-adherence with pharmacotherapy, relapse of the non-drug comorbid condition, increased hospitalisation, and poor prognosis overall.

Management of dependence

Once the dependence syndrome has developed, the management depends on the drug, the patient's environment and the patient. With amphetamines, the environment can be either in the community or a protected place, and the patient's awareness and goals influence realistic options of care. The management options for amphetamine dependence are contingent on four subtypes within the dependence syndrome, which need to be considered. These are described below.

Dependence and the desire to continue using

If the patient is continuing to use amphetamines and does not currently wish to stop, management should be along the lines of harm reduction. These goals are outlined in Box 4.

Education is required about the dangers of amphetamine use and the options available for changing that behaviour, as outlined above for those experimental and recreational users. Some patients may not see their drug use as a problem. The theory proposed by Prochaska & Di Clemente (1992) is a useful working model when helping patients. This model suggests at least four stages of change from pre-contemplation, contemplation, action and maintenance. If patients continue to use amphetamines and are in the pre-contemplative phase (i.e. do not recognise their drug problem), then efforts to encourage abstinence will fail. In this case, the process of motivational interviewing can be used to effect change towards awareness and a wish to move away from continued drug use (Miller & Rollnick, 1991). In this style of interviewing, there are five main strategies (see Box 5).

In the case of comorbidity, awareness raising is directed at the negative interaction of the drugs and the patient's mental state. The aim is to change patients' perspectives of their drug misuse rather than instructing them on the danger of it (i.e. if they do not like being mentally unwell then they could improve their prognosis by changing their drug use). Unless patients see an advantage in changing their behaviour they are unlikely to do so. Treatment should be concurrent rather than sequential as this is more likely to retain patients in treatment and tends to lead to engagement in changed behaviour. Ideally, one team – but where expertise is lacking, liaison or a joint clinic – is recommended, rather than the patient having to attend two separate appointments. The development of dedicated teams in the management of comorbidity is currently under evaluation in this country.

Preventing relapse

Dependence and abstinence in the community

If the patient is abstinent and in the community, then the focus should be on relapse prevention techniques. The areas causing relapse are outlined in Box 6.

The application of relapse prevention can be divided into three parts. The first is raising awareness regarding the areas causing relapse and the high-risk situations being explored. The next is developing skills to anticipate, avoid or cope with

Box 4. Goals of harm reduction

Reduce sharing of injecting equipment by information on local needle exchanges, or if not possible provide advice on cleaning equipment
Reduce injecting by encouraging alternate routes of delivery, preferably oral
Stop illicit drug use

Box 5. Motivational interviewing

Express empathy
Avoid arguing
Detect and 'roll with' resistance
Highlight discrepancies in history
Raise awareness about contrast between the service user's aims and behaviour

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these high-risk situations, and these are outlined in Box 7.

This phase of relapse prevention may be supplemented by pharmacotherapy, for example, antidepressants, primarily when mood remains a continuing trigger for relapse. The final stage in relapse prevention is the implementation of a global lifestyle change away from drug misuse towards a more normalised and socialised lifestyle.

Dependence in a protected environment

People with dependence syndrome may be abstinent in a protected environment. This treatment setting may be divided into four groups: rehabilitation houses; religious units; community crisis rehabilitation units; and residential 12-step programmes. The essential elements of management within these units are to provide a safe drug-free environment, address pre-existing causes, solve current problems, and equip patients with greater personal resources for their discharge back into the community. Most units require funding and this is accessed currently through social service assessments. Availability of these funds varies across the country, hence the likelihood of this being a realistic option also varies, as does the timescale over which it may operate.

Dependence and the desire to stop using in the community

The final category is patients with a stimulant dependence syndrome who want to come off drugs. Current opinion is that "an abstinence based psychosocial treatment approach linking counselling and social support has the greatest impact" (DoH, 1999). Symptomatic treatment of related complications (as outlined in Box 2) may be required. Based on the literature, treatment options are limited in that they are exclusively abstinence-oriented, with the majority involving residential settings. The main focus therefore is on relapse prevention as mentioned above. Various drugs have been suggested as being useful and these have been outlined by Seivewright & McMahon (1996). Unfortunately, research results do not justify their use as part of standard therapy for stimulant-dependent individuals. Antidepressant medication has been used in view of the mood swings experienced following stimulant abstinence. Again, although theoretically sound, the research does not provide relevant guidelines for day to day practice. The abstinence-oriented approach is failing some users in the community, and is either is not getting them in touch with services, or leaving them with a feeling that the service has nothing to offer them, therefore they are lost to contact. Thus, valuable harm-reduction interventions are lost. In view of this and increasing concern about amphetamine dependence morbidity, one option being practised in the UK by some specialist units is substitute prescribing of amphetamines. There is no good evidence base for this practice, yet from a harm-reduction prospective, it seems to have 'face validity'. Data from the 1995 National Survey of Community Pharmacists in England and Wales showed that amphetamine prescribing to drug misusers is widespread, with extrapolated estimates across England and Wales of between 900 and 1000 patients. If the extent of amphetamine prescribing of the most active provincial region were replicated elsewhere, then it is estimated that approximately 5000 addicts would receive amphetamines on prescription (Strang & Sheridan, 1997). Their concluding comment was that:

> "...there was a lack of coherence of national treatment responses in which such extensive amphetamine prescribing has developed largely

Box 6. Areas causing relapse

- **Negative life events**
- **Cognitive appraisal including self-efficacy, expectancy and motivation for change**
- **Service user coping resources**
- **Craving experiences**
- **Affective/mood status**

Box 7. Acquired skills to implement relapse prevention

- **Identification of high-risk relapse factors**
- **Understanding relapse as a process and as an event**
- **Learning to deal with substance cues as well as actual cravings**
- **Learning to deal with social pressures to use drugs**
- **Development of supportive network**
- **Methods of coping with negative emotional states**
- **Skills to cope with cognitive distortions**
- **Development of a plan to interrupt a lapse or relapse**

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uncharted and apparently with little attention to the incorporation of practical safeguards against diversion".

The new *Guidelines on Clinical Management of Drug Misuse and Dependence* (DoH, 1999) suggest that there is a limited place for the prescription of dexamphetamine sulphate, either as the elixir or as the tablet form. There is limited evidence from some practitioners in the UK that benefits can be gained (Myles, 1996; McBride *et al*, 1997; Fleming, 1998). This research suggests that substitute prescribing in stimulant-dependent syndrome achieves similar goals to methadone prescribing in opiate dependence syndrome (i.e. a reduction in sharing of injection equipment, a reduction in injecting, a reduction in illicit drug use, a reduction in criminal activity and a normalisation of lifestyle). A survey of specialists in drug dependence in England and Wales in 1996, with a 74% response rate, found that of the 149 doctors who responded, 46% were prescribing amphetamines and 60% felt that there was a role for the prescription of amphetamines (Fleming, 1998). The suggestion from these studies is that prescribing should be limited to primary injecting amphetamine users who are using at least 1 g per day daily and have been doing so for a number of months, although some services are prescrib for non-injecting amphetamine users. Exclusions should include poly-drug use, history of mental illness, hypertension or heart disease and pregnancy. Suggested prescribing regimes have a mean dose of around 35 mg of amphetamine daily with an upper limit of between 60–65 mg daily. Elixir preparation is preferable to tablets to ensure adherence with supervised consumption. It should be taken orally and dispensed on several days of the week, preferably daily. This minimises the opportunity for diversion. Initially, regular monitoring by urine analysis should be done to confirm that the amphetamine is being taken. There is no clear advice on how long prescribing should continue. However, if benefits are being derived from the prescription and the goals that were set are being met and then relapse occurs if the prescription is withdrawn, then, on balance, it would make sense to continue the prescription until it can be tailed off at a later stage.

It is clear that this is an extremely contentious issue and further research must be carried out to establish whether this widely practised intervention, which has 'face validity', is supported by controlled studies.

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Multiple choice questions

1. Amphetamine users:
   a are less common in the community than heroin users
   b are less common in specialist drug services than heroin users
   c can be more frequent users of needle exchanges than opiate users
   d experimental and recreational use always leads to dependence
   e dependent users always require professional help to become drug-free.

2. Complications of amphetamine use are:
   a hypertension
   b hepatitis C infection

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c weight loss
d depression
e paranoid psychosis.

3. Features of a dependence syndrome are:
a an evidence of tolerance
b progressive pleasure from the drug
c persistence with the drug despite harmful consequences
d a strong desire to take the substance
e a need to inject.

4. Areas causing relapse are:
a positive life events
b affective/mood status
c the service user's coping resources
d a loss of belief in the possibility of change
e sexual experiences.

5. If prescribing dexamphetamine, then:
a the tablet form is preferred to the elixir
b dosage should not be above 20 mg
c dispensing arrangements are typically weekly
d if goals of treatment are not met, prescribing should stop
e severe mental illness is not a contraindication.

MCQ answers

1	2	3	4	5
a F	a T	a T	a F	a F
b T	b T	b F	b T	b F
c T	c T	c T	c T	c F
d F	d T	d T	d T	d T
e F	e T	e F	e F	e F

Commentary

Roch Cantwell

In the sometimes sensational world of illicit drug reportage, there is one unsung villain. While heroin misuse remains the *bête noir* of tabloid journalism, ecstasy the demon of the dance floors and cocaine caricatured as the choice of the rich and famous, amphetamine misuse has lurked the shadows. Its use defies such simple categorisation and spans several groups in society. Bruce has provided a timely reminder of this neglected area in substance misuse literature and, in the process, has highlighted the relevance of basic information gathering as the most important tool in the armamentorium of drug misuse workers. The lack of prominence given to what they describe as a "hidden epidemic" is striking. Could this be because amphetamine misuse is a less prevalent problem than that of other illicit drugs? Evidence suggests otherwise. Amphetamine is the second most common illicit drug seized in the UK (after cannabis). It is easily produced and used in a variety of modes, and recent research confirms a high prevalence of misuse in this country reflecting that found in North American and Australian literature.

What other explanation can there be for its neglect by the Government and health service? In some circles, amphetamine is viewed as at the 'softer' end of the range of illicit substances, identified as part of dance culture or as a substance taken in similar contexts to cannabis. However, the evidence for harm associated with amphetamine is mounting. It is frequently injected and those injecting have high levels of associated risk-taking behaviour. A recent Edinburgh study revealed that amphetamine was injected by more subjects (44% of their sample of injecting drug users) than any other drug (Peters *et al*, 1997). Results from the ongoing National Treatment Outcome Research Study (NTORS) project also suggest high rates among those attending

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