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Wolters Kluwer

Stimulant use disorder: Psychosocial management

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INTRODUCTION

Cocaine, methamphetamine, and other stimulant use disorders are significant public health problems. In the United States, for example, there are 1.5 million regular cocaine users and approximately 353,000 regular methamphetamine users [1]. Cocaine and methamphetamine users have significantly elevated rates of medical morbidity and utilization of health care resources [2].

Only psychosocial interventions have proven efficacious in reducing stimulant use in patients with stimulant use disorders, but these treatments alone are insufficient for many patients. No medications have been shown in randomized trials to be consistently efficacious for stimulant use disorders.

Psychosocial interventions for stimulant use disorder are reviewed here and in an algorithm ([algorithm 1](#)). Our preference for initial and subsequent treatment for stimulant use disorder is described separately. The epidemiology, clinical manifestations, course, consequences, assessment, and diagnosis of cocaine use disorder and methamphetamine use disorder are also described separately, as are identification and treatment of prescription drug misuse.

- (See "[Cocaine use disorder: Epidemiology, clinical features, and diagnosis](#)".)
- (See "[Methamphetamine use disorder: Epidemiology, clinical features, and diagnosis](#)".)
- (See "[Stimulant use disorder: Treatment overview](#)".)
- (See "[Prescription drug misuse: Epidemiology, prevention, identification, and management](#)".)

STIMULANTS

Stimulants subject to abuse and addiction include:

- Cocaine
- Methamphetamine
- Diverted pharmaceutical stimulants (eg, [dextroamphetamine](#))
- Synthetic cathinones ("bath salts")

Each of these stimulants is described in more detail separately. (See "[Cocaine use disorder: Epidemiology, clinical features, and diagnosis](#)" and "[Stimulant use disorder: Treatment overview](#)".)

Most clinical trials of psychosocial treatments for stimulant use disorder have been conducted in samples of patients using cocaine. Because all of these stimulants have similar mechanisms of action and addiction to them leads to similar clinical manifestations, it is reasonable to try a psychosocial intervention with efficacy for one stimulant (eg, cocaine) on patients addicted to another stimulant (eg, methamphetamine).

INTERVENTIONS

Contingency management and cognitive-behavioral therapy (CBT) have been found to be efficacious for stimulant use disorder in multiple clinical trials. Evidence from clinical trials of motivational interviewing, drug counseling, and intensive outpatient therapy (IOT) in stimulant use disorder is less convincing, but in our clinical experience these interventions can help some patients with stimulant use disorder to maintain abstinence ([algorithm 1](#)).

Drug counseling — Drug counseling is a broadly used term to describe individual and group psychosocial interventions that aim to help patients reduce substance use. Counseling typically includes education and may incorporate elements of cognitive, behavioral, insight-oriented, and/or supportive psychotherapies.

The content of the counseling provided in many treatment programs is based on the principles of 12-step programs like Narcotics Anonymous. The sessions address such topics as:

- Helping patients avoid situations where they are likely to encounter alcohol or drugs or triggers for their use
- Planning safe social activities

- Continuing attendance at mutual help groups between counseling sessions

Standard outpatient counseling — Standard outpatient drug counseling typically consists of one or two sessions per week; the duration of an individual counseling session is typically between 30 to 60 minutes, while group sessions are 60 to 90 minutes in length.

Intensive outpatient therapy — IOT provides drug counseling in individual and group formats with varying levels of family involvement. The therapy is provided in sessions that occur several days weekly for a duration of several weeks. The content of IOT can vary from program to program. IOT was initially provided to hospital inpatients, but today is typically provided via intensive outpatient programs, a level of care delivered over a total of nine hours per week. (See ["Substance use disorders: Determining appropriate level of care for treatment", section on 'Intensive outpatient programs'.](#))

Groups tend to focus on education and issues common to all stimulant users, whereas individual counseling may focus more on unique problems of the individual drug user. Family therapy may involve teaching family members of stimulant users how to deal with alcohol and drug related situations involving the stimulant user. Group sessions typically have a topical focus, such as:

- Education about substance use disorder
- Relapse prevention
- Medication education
- HIV prevention
- Health promotion

Participation in mutual help groups (such as 12-step meetings) is generally encouraged. Mutual help groups for substance use disorder are described in detail separately. (See ["Alcohol use disorder: Psychosocial management", section on 'Mutual help groups'.](#))

Efficacy — Outpatient drug counseling is the most available and widely used treatment modality; however, the efficacy of standard outpatient drug counseling for cocaine and other stimulant use disorders has not been sufficiently tested.

One clinical trial found that the combination of individual and group drug counseling resulted in greater reductions in cocaine use compared with group drug counseling alone or with two other psychosocial interventions. In a multicenter randomized clinical trial sponsored by the National Institute of Drug Abuse (NIDA) 487 subjects with cocaine use disorder were randomly assigned to one of four six-month treatment conditions: individual drug counseling plus group drug counseling (IDC/GDC), CBT plus GDC (CBT/GDC), supportive expressive therapy plus GDC

(SET/GDC) or GDC alone [3]. After six months of treatment, the IDC/GDC group had the lowest proportions of patients with cocaine use compared with CT/GDC, GDC/SE, and GDC groups (estimated as 39.8 versus 58.2 and 50.3 and 52.0 percent, respectively).

Study of IOT for stimulant use disorders is insufficient to determine a superior efficacy to more standard counselling. Uncontrolled cohorts have shown associations between IOT and reduced drug use over baseline [4,5], but a cohort study and a randomized trial comparing standard and intensive treatment found no differences in subsequent use:

- A multisite natural cohort analysis of 918 subjects with cocaine use disorder compared 338 subjects receiving IOT (more than nine hours per week) with 580 patients receiving standard treatment (one or two sessions up to four hours per week) over six months [4]. Both groups experienced reduced drug use during the trial; there were no differences in drug use between the two groups.
- A clinical trial randomly assigned 94 subjects with cocaine use disorder to either a 12-hour per week IOT or a six-hour per week standard outpatient treatment [5]. At seven months posttreatment, subjects in both groups showed a 52 percent reduction in days of cocaine use and showed improvements in psychiatric functioning and employment. There were no differences in any outcomes between groups.

Thus, neither clinical trials nor expert clinicians/researchers have provided a clear consensus on the optimal intensity of IOT. Even relatively low-intensity treatment (two to three hours per week) may provide benefit in patients with an American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) diagnosis of cocaine or methamphetamine dependence [4,6].

Cognitive-behavioral therapy — Patients participating in CBT are taught to understand drug use within the context of antecedents and consequences. Patients are taught to recognize the situations or states associated with drug use and avoid these whenever possible. Patients are also taught a variety of coping skills, such as distraction, recall of negative consequences, and positive thought substitution, to use to avoid drug use when they cannot avoid situations or states that trigger it [7]. CBT for substance use disorders is described in greater detail separately. (See "[Substance use disorders: Psychosocial management](#)".)

Clinical trials suggest that CBT is efficacious compared with treatment as usual and certain psychosocial interventions [8-11]:

- A trial compared CBT with 12-step facilitation therapy in 134 cocaine-dependent patients over 12 weeks [8]. Patients randomly assigned to receive CBT were more likely to achieve

four consecutive weeks of abstinence at the end of the trial compared with subjects assigned to 12-step facilitation (44 versus 32 percent).

- A trial randomly assigned 124 cocaine-dependent subjects to coping skills training (CST; a CBT-based intervention) or to a manualized meditation and relaxation training control condition [9]. No difference was seen between groups in the proportion that remained abstinent during the three-month posttreatment follow-up period, but subjects receiving CST had fewer days of cocaine use compared with subjects randomized to the control condition during the period. This difference in days of cocaine use remained present at six months [10].
- A trial randomly assigned 978 methamphetamine dependent subjects to receive 16 weeks of Matrix treatment, which has a large CBT component, or treatment as usual [11]. Subjects randomized to Matrix treatment provided more methamphetamine-negative urine drug screens and had longer periods of abstinence from methamphetamine compared with subjects assigned to treatment as usual; the two groups did not differ in self-reported drug use.

In contrast, CBT appeared to be inferior to combined individual and group drug counseling in the NIDA multicenter trial described above [12]. Among 487 subjects with DSM-IV cocaine dependence, combined individual and group drug counseling resulted in fewer days of cocaine use compared with CBT [3]. (See 'Efficacy' above.)

Secondary analyses of clinical trials suggest CBT may be more efficacious in cocaine-dependent patients with more severe substance use disorder symptoms and in patients with a concurrently depressed mood [8,13].

Limited data suggest that, when efficacious, CBT may provide the most durable treatment effect. In trials showing reductions in cocaine use among cocaine-dependent patients in response to CBT, cocaine use continued to decrease after the therapy was completed [13,14]. As an example, a one-year follow-up study of 121 individuals with a diagnosis of cocaine use disorder who had been randomized to receive 12-weeks of treatment with CBT, a psychotherapy control condition, or [desipramine](#) found that patients originally assigned to receive CBT continued to improve during the follow-up phase of the trial, whereas patients assigned to the other two treatment groups did not [13]. The continuing positive effects of CBT during the follow-up phase was attributed to the continued application of coping skills taught to the patients during the active phase of treatment.

Contingency management — Voucher-based reinforcement therapy (VBRT), a form of contingency management, is efficacious in promoting initial abstinence in stimulant-dependent

patients. In VBRT, patients receive vouchers redeemable for goods and services in the community contingent upon achieving a predetermined therapeutic goal, such as drug abstinence. It is based on the behavioral principle that a behavior that is rewarded is more likely to be repeated. VBRT is delivered as a component of a psychosocial treatment, such as IOT or drug counseling, rather than alone. VBRT and other forms of contingency management for substance use disorders are described in detail separately. (See ["Substance use disorders: Principles, components, and monitoring during treatment with contingency management"](#), section on 'Voucher reinforcement' and ["Substance use disorders: Training, implementation, and efficacy of treatment with contingency management"](#).)

Meta-analysis and several small randomized trials have shown VBRT to be efficacious in promoting initial abstinence in cocaine users receiving psychosocial treatment [15-20].

As an example, in a meta-analysis of 38 trials including 2744 participants, contingency management was associated with the highest percentage of individuals with negative urine tests for cocaine metabolites at the end of treatment (38 percent) compared with other interventions (eg, various pharmacotherapies and other psychotherapy) [20]. In addition, contingency management was the only treatment associated with a statistically significant increase in negative test results for cocaine at treatment end (odds ratio 2.13, 95% CI 1.62-2.8).

A disadvantage of VBRT is the program's cost. Lower cost versions of VBRT using intermittent reinforcement has been shown to be effective [21]. (See ["Substance use disorders: Principles, components, and monitoring during treatment with contingency management"](#), section on 'Intermittent prize-based reinforcement'.)

Another limitation of VBRT (and other methods of contingency management) is that the positive effects of the intervention on cocaine abstinence are not long-lasting. The benefits fade after the reinforcers are removed [22]. VBRT may be best utilized in conjunction with other therapies more likely to affect long-term outcomes such as CBT. As an example, in a clinical trial that compared 16 weeks of treatment with contingency management, CBT, or a combination of the two interventions in 171 patients with DSM-IV stimulant dependence. Patients assigned to contingency management had higher rates of treatment retention and lower rates of stimulant use compared with the CBT and combined-treatment groups during the treatment period [18]. Stimulant use outcomes were comparable among groups at 6- and 12-month follow-up.

Motivational interviewing — Motivational interviewing is a directive, patient-centered counseling approach that aims to help people change problem behaviors. It is used to enhance intrinsic motivation to change by exploring and resolving ambivalence. A large meta-analysis of randomized trials found motivational interviewing to reduce substance use in adults with

substance use disorder, compared with no treatment, following the intervention and at subsequent follow-up for as long as 12 months [23]. Motivational interviewing for substance use disorders is described in detail separately. (See "[Substance use disorders: Motivational interviewing](#)".)

Motivational interviewing has not been found to be efficacious overall. Further research is needed to test the intervention in more frequent cocaine users, who may be more likely to respond to the intervention [24,25].

- A clinical trial randomly assigned 165 cocaine-dependent subjects to receive either a two-session motivational enhancement therapy (MET) or a meditation relaxation control group followed by either four group sessions of coping skills training or drug education [24]. No differences in cocaine use outcomes were found in patients who received MET compared with the relaxation control.
- A clinical trial randomly assigned 198 cocaine-dependent subjects to receive a four-session MET intervention or to participate in an assessment control group [25]. There was no difference between groups in cocaine use outcomes at six-month follow-up. A secondary analysis of subjects with more frequent cocaine use found that patients who received MET had lower rates of relapse to cocaine use and greater reduction in cocaine use days.

SOCIETY GUIDELINE LINKS

Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "[Society guideline links: Stimulant use disorder and withdrawal](#)".)

SUMMARY

- **Stimulant use disorder** – Only psychosocial interventions have proven efficacious in reducing stimulant use in patients with stimulant use disorders, but these treatments alone are insufficient for many patients. No medications have been shown in randomized trials to be consistently efficacious for stimulant use disorders. (See '[Introduction](#)' above.)
- **Stimulants** – Cocaine, methamphetamine, and diverted pharmaceutical stimulants all have similar mechanisms of action and addiction to them leads to similar clinical manifestations. It is reasonable to try a psychosocial intervention with efficacy in one of them on patients addicted to another. (See '[Stimulants](#)' above.)

- **Drug counseling** – Drug counseling is a broadly used term to describe individual and group psychosocial interventions that aim to help patients reduce substance use. Counseling typically includes education and may incorporate elements of cognitive, behavioral, insight-oriented, and/or supportive psychotherapies. (See ['Drug counseling'](#) above.)
- **Cognitive-behavioral therapy (CBT)** - Patients participating in CBT are taught to understand drug use within the context of antecedents and consequences, to recognize the situations or states associated with drug use, and taught skills to avoid them. Clinical trials suggest that CBT is efficacious in treatment of stimulant use disorder. (See ['Cognitive-behavioral therapy'](#) above.)
- **Contingency management** – Voucher-based reinforcement therapy, a form of contingency management, is efficacious in promoting initial abstinence in stimulant-dependent patients. Contingency management is an adjunctive addition to regular treatment such as drug counseling. (See ['Contingency management'](#) above.)
- **Motivational interviewing** – Motivational interviewing is a directive, patient-centered counseling approach that aims to help people change problem behaviors. It is used to enhance intrinsic motivation to change by exploring and resolving ambivalence. (See ['Motivational interviewing'](#) above.)

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