Choosing a treatment for disruptive,

impulse-control, and conduct disorders

Limited evidence, no approved drugs to guide treatment

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Chronic disruptive and impulsive behaviors are significant concerns for psychiatric clinicians because of their persistence and potential legal ramifications. To date, few studies have assessed treatment options for pyromania, oppositional defiant disorder (ODD), intermittent explosive disorder (IED), kleptomania, and conduct disorder (CD).

This article reviews the literature on the treatment of these disorders, focusing primarily on randomized, controlled studies. Because of the lack of clinical studies for these disorders, however, case studies and open trials are mentioned for reference. Summaries of supported medication and psychological interventions are provided for each disorder.

Categorizing impulse-control disorders

The DSM-5 created a new chapter on disruptive, impulse control, and conduct disorders that brought together disorders previously classified as disorders usually first diagnosed in infancy, childhood, or adolescence (ODD, CD) and impulse-control disorders not elsewhere classified. These disorders are unified by the presence of difficult, disruptive, aggressive, or antisocial behavior. Disruptive, aggressive, or antisocial behavior usually is a multifaceted behavior, often associated with physical or verbal injury to self, others, or objects or with violating the rights of others. These behaviors can appear in several forms and can be defensive, premeditated, or impulsive.

Despite a high prevalence in the general population[1] and in psychiatric cohorts,[2] disruptive and impulse-control disorders have been relatively understudied. Controlled trials of treatments do not exist for many impulse-control disorders, and there are no FDA-approved medications for any of these disorders.

continued

Impulse-control disorders

Clinical Point

Stimulants are commonly used to treat ODD because of a high comorbidity rate with ADHD

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Oppositional defiant disorder

Irritability, anger, defiance, and temper are specific descriptors of ODD. ODD seems to be a developmental antecedent for some youth with CD, suggesting that these disorders could reflect different stages of a spectrum of disruptive behavior. Transient oppositional behavior is common among children and adolescents, but ODD occurs in 1% to 11% of youth.[3] The disorder is more prevalent among boys before puberty and has an equal sex prevalence in young people after puberty.

Regrettably, most ODD research has included patients with comorbidities, most commonly attention-deficit/hyperactivity disorder (ADHD). Because of this limitation, the drugs and programs discussed below are drawn from meta-analyses and review articles.

Pharmacotherapy. No medications have been FDA-approved for ODD. Studies assessing ODD have employed a variety of methodologies, not all of which are double-blind. The meta-analyses and reviews cited in this section include both randomized and open trials, and should be interpreted as such.

Stimulants are commonly used to treat ODD because of a high comorbidity rate with ADHD, and these drugs have improved ODD symptoms in randomized trials.[4] Methylphenidate and d-amphetamine have shown some efficacy in trials of ODD and CD.[5-7] These medications are most commonly used when ODD is complicated by ADHD symptoms.

Antipsychotics also have been used to treat ODD, with the largest body of research suggesting that risperidone has some efficacy. Risperidone usually is considered a second- or third-line option because it has been associated with adverse effects in children and adolescents and requires caution in younger populations, despite its potential efficacy.[4,8-10]

Alpha-2 agonists—clonidine and guanfacine—have shown some efficacy in treating ODD but have not been studied extensively. Studies of clonidine, however, often have grouped ODD, CD, and ADHD, which limits our understanding of this medication for ODD alone.[4,5,11]

Atomoxetine has been studied for ODD, but its efficacy is limited, with different meta-analyses finding distinct results regarding efficacy. One explanation for these disparate findings is that improvements in oppositional symptoms may be secondary to improvement in ADHD symptoms.[7,12-14]

Psychological treatments. As noted for pharmacotherapy, this section provides general information on empirically studied therapies. A series of meta-analyses have been included for further review, but are not isolated to randomized, controlled studies.

Individual therapy has shown consistent improvements in ODD. Examples include behavior modification therapy and parent-child interaction therapy. These sessions emphasize skills to manage outbursts and erratic emotionality. Emotion regulation and behavior and social skills training have shown significant reductions in target measures. Some of these programs incorporate both patient and parent components.[15-17]

Family/teacher training programs such as "Helping the Noncompliant Child" and the "Triple P" have yielded significant improvements. These programs focus on ways to manage the child's oppositional behavior at home and in the classroom, as well as strategies to limit positive reinforcement for problem behaviors.[17-20]

Group programs have shown some efficacy with ODD. These programs cover a wide number of needs and intents. Examples include the "Incredible Years" program and the Community Parent Education Program. Research has found that these programs show some efficacy as preemptive measures to reduce the rate of ODD among adolescents.

Conclusions. A number of treatment options for ODD have shown some efficacy. However, many of these options have only been studied in patients with comorbid ADHD, which limits current knowledge about ODD as a distinct disorder.

Intermittent explosive disorder

IED is defined by recurrent, significant outbursts of aggression, often leading to assaultive acts against people or property, which

are disproportionate to outside stressors and are not better explained by another psychiatric diagnosis. Research suggests IED is common, with 6.3% of a community sample meeting criteria for lifetime IED.[21]

IED symptoms tend to start in adolescence and appear to be chronic.[21,22] People with IED regard their behavior as distressing and problematic.[22] Outbursts generally are short-lived (usually <30 minutes) and frequent (multiple times a month[22]). Legal and occupational difficulties are common.[22]

Pharmacotherapy. Data on drug treatment for IED comes for a small set of double-blind studies (***Table, page 32***). Although pharmacotherapies have been studied for treating aggression, impulsivity, and violent behavior, only 5 controlled studies are specific to IED.

A double-blind, randomized, placebo-controlled trial of fluoxetine in 100 participants with IED found that fluoxetine produced a sustained reduction in aggression and irritability as early as the second week of treatment. Full or partial remission of impulsive aggressive behaviors occurred in 46% of fluoxetine-treated subjects. These findings have been supported by studies assessing other samples of aggressive patients, but not specifically IED.[23,24] Another treatment study found that oxcarbazepine produced significant improvements in IED symptom severity, specifically on impulsive aggression.[25]

In a randomized, double-blind, placebo-controlled study, 96 participants with Cluster B personality disorders, 116 with IED, and 34 with posttraumatic stress disorder were assigned to divalproex sodium or placebo for 12 weeks. Using an intent-to-treat analysis, divalproex had no significant influence on aggression in patients with IED.[26] Similarly, a study assessing levetiracetam for IED did not show any improvements to measures of impulsive aggression.[27]

Psychological treatments. The only available study on psychological treatments for IED found that patients receiving active cognitive-behavioral therapy (CBT) or group therapy showed significant improvements compared with waitlist controls. These improvements spanned several target symptoms of IED.[28]

Conclusions. Although there is a paucity of treatment studies for IED, fluoxetine may be an effective treatment based on available studies, and oxcarbazepine has shown some preliminary efficacy. CBT also has shown some initial efficacy in reducing symptom severity in IED.

Conduct disorder

The essential feature of CD is a repetitive and persistent pattern of behavior in which the basic rights of others or social norms are violated.[3] These behaviors can entail:

- aggressive conduct that causes or threatens harm to others or to animals
- nonaggressive behavior resulting in property damage
- deceitfulness or theft
- serious violation of rules.

Prevalence among the general population is 2% to 10%. The disorder is more common among boys than girls.[3]

Pharmacotherapy. No medication is FDA-approved to treat CD. Fifteen controlled studies have examined medications in patients with CD (***Table, page 32***), although a number of these included a high rate of comorbid ADHD.

To date, 7 studies have shown efficacy with lithium for patients with CD.[29-35] A number of trials assessing lithium also included a treatment condition with haloperidol, which showed significant improvement.[29,30,33,34] Both lithium and haloperidol were associated with select deficits on cognitive tests, suggesting that there may be risks associated with these medications.

Preliminary double-blind results have indicated that methylphenidate, risperidone, quetiapine, molindone, thioridazine, and carbamazepine might be effective options for treating CD.[36-43] The evidence for these medications is limited and additional studies are needed to replicate initial findings.

Three studies of divalproex sodium have shown some efficacy in randomized studies comparing high and low dosages of the drug.[40-42] Because these studies did not include a placebo, additional studies are necessary to corroborate these findings.

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Impulse-control disorders

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Table

Trials[a] of medication for disruptive, impulse-control, and conduct disorders

Impulse-control disorder[b]	Medication	Design, duration	Subjects
Intermittent explosive disorder (IED)			
Coccaro et al, 2009[23]	Fluoxetine	Parallel design, 12 weeks	100 enrolled, 55 completers
Hollander et al, 2003[26]	Divalproex	Parallel design, 12 weeks	109 subjects, No data on % completers (IED)
Mattes, 2005[25]	Oxcarbazepine	Parallel design, 10 weeks	48 enrolled, 24 completers (45 with at least 4 weeks)
Mattes, 2008[27]	Levetiracetam	Parallel design, 10 weeks	40 enrolled, 19 completers (34 with adequate trial)
Conduct disorder			
Campbell et al, 1984[29]	Lithium vs haloperidol vs placebo	Parallel design, 6 weeks	82 enrolled, 61 completers
Campbell et al, 1995[30]	Lithium vs placebo	Parallel design, 10 weeks	79 enrolled, 50 completers
Malone et al, 1998[31]	Lithium vs placebo	Parallel design, 6 weeks	40 enrolled, 40 completers
Malone et al, 2000[32]	Lithium vs placebo	Parallel design, 6 weeks	86 enrolled, 40 completers
Platt et al, 1981[33]	Lithium vs haloperidol vs placebo	Parallel design, 6 weeks	30 enrolled, 27 completers
Platt et al, 1984[34]	Lithium vs haloperidol vs placebo	Parallel design, 6 weeks	82 enrolled, 61 completers
Rifkin et al, 1997[35]	Lithium vs placebo	Parallel design, 2 weeks	33 enrolled, 26 completers
Cueva et al, 1996[36]	Carbamazepine vs placebo	Parallel design, 6 weeks	24 enrolled, 22 completers
Findling et al, 2000[37]	Risperidone vs placebo	Parallel design, 10 weeks	20 enrolled, 9 completers (4 lost from active group)
Connor et al, 2008[38]	Quetiapine vs placebo	Parallel design, 7 weeks	19 enrolled, 8 completers (1 lost from active group)
Greenhill, 1985[39]	Molindone vs thioridazine	Parallel design, 9 weeks	31 enrolled
Khanzode et al, 2006[40]	High-dose divalproex vs low-dose	Parallel design, 7 weeks	71 enrolled; intent to treat analysis
Padhy et al, 2011[41]	High-dose divalproex vs low-dose	Parallel design, 7 weeks	70 enrolled, 61 completers
Steiner et al, 2003[42]	High-dose divalproex vs low-dose	Parallel design, 7 weeks	71 enrolled; intent-to-treat analysis
Klein et al, 1997[43]	Methylphenidate vs placebo	Parallel design, 5 weeks	83 enrolled, 74 completers
Kleptomania			
Grant et al, 2009[50]	Naltrexone	Parallel design, 8 weeks	25 enrolled, 23 completers
Koran et al, 2007[51]	Escitalopram	Mixed method	15 assigned to blinded termination

[a]Double-blind, placebo-controlled
[b]No controlled studies have assessed treatment of pyromania or oppositional defiant disorder independent of comorbid diagnoses
SD: standard deviation

Mean daily dosage (±SD)	Outcome
29.8 (± 12.6) mg for responders	Fluoxetine group showed sustained reduction in symptoms
1,567 mg	Similar improvement in IED and placebo
1500 (± 630) mg	Oxcarbazepine group showed significant reduction in symptoms
2313 (± 854) mg	No improvement compared with placebo
Lithium: 500 to 2,000 mg; Haloperidol: 1.0 to 6.0 mg	Both active groups showed improvement across measures
600 to 1,800 mg	Lithium showed improvements in aggression symptoms
1425 (± 321) mg	Explosive aggression showed greater response vs predatory aggression
1,425 (± 321) mg	Lithium group had greater reduction of aggression symptoms
1.5 to 6 mg	Both active groups showed some cognitive deficits
Lithium: 1,000 to 2,000 mg; Haloperidol: 1.0 to 6.0 mg	Both active groups showed some cognitive deficits
0.6 to 1.0 mmol/L	No significant change on aggression measure
400 to 800 mg	No significant differences by group in regard to aggression
0.75 to 1.50 mg	Active group improved across measures
294 ± 78 mg	Active group improved across measures
Molindone: 27 mg; Thioridazine: 170 mg	Aggressive symptoms improved in both groups
500 to 1500 mg or ≥250	Depression and impulse control improved in high-dosage group
500 to 1500 mg or ≥250	High-dosage group showed greater improvement
500 to 1500 mg or ≥250	Moderate improvements on impulse control
41.3 mg (no SD provided)	Active group improved across measures
116.7 (± 44.4) mg	Naltrexone significantly superior to placebo
20 mg	No improvement compared with placebo for preventing relapse

Psychological treatments. Several forms of behavioral, family-based, and school-based therapies have been found effective in randomized trials. Specifically, behavioral therapy and parental skills training have shown consistent benefits for patients and their families. As with ODD, parental training programs for CD focus on parents' skill acquisition to help manage outbursts and aggressive behavior. These treatments often follow a similar course to those used for other externalizing and disruptive disorders.[44-46]

Conclusions. Based on evidence, psychotherapy and some pharmacotherapies (eg, lithium) could be considered first-line treatment options for CD. Psychotherapy programs have shown efficacy in reducing aggression in high-risk groups.[44] Lithium or antipsychotics could be useful for patients who do not respond sufficiently to psychotherapy. The risk of cognitive deficits with lithium and antipsychotics should be weighed against potential benefits of these medications.[33,34]

Kleptomania

Kleptomania is characterized by repetitive, poorly controlled stealing of items that are not needed for personal use. Kleptomania often begins in late adolescence or early adulthood.[47] The course of the illness generally is chronic, with waxing and waning symptoms. Women are twice as likely as men to suffer from kleptomania.[48] People with kleptomania frequently hoard, discard, or return stolen items.[47]

Most people with kleptomania try unsuccessfully to stop stealing, which often leads to feelings of shame and guilt.[48] Many (64% to 87%) have been arrested because of their stealing behavior[47]; a smaller percentage (15% to 23%) have been incarcerated.[48] Suicide attempts are common among these patients.[49]

Pharmacotherapy. There has been only 1 randomized, placebo-controlled study of pharmacotherapy for kleptomania (***Table***). An 8-week, double-blind, placebo-controlled trial was conducted to evaluate the safety and efficacy of oral naltrexone, 50 to 150 mg/d, in 25 patients with kleptomania. Those taking naltrexone had a significantly greater reduc-

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A single controlled study suggests that naltrexone might be a beneficial treatment for kleptomania

tion in total score than those taking placebo on the Yale-Brown Obsessive Compulsive Scale Modified for Kleptomania; in stealing urges; and in stealing behavior. The mean effective dosage of naltrexone was 116.7 (± 44.4) mg/d.[50]

Naltrexone was well tolerated, with minimal nausea, and did not cause elevation of liver enzymes.

There is one available open-label study with a double-blind discontinuation phase assessing the efficacy of escitalopram for kleptomania. Continuation of escitalopram during the blinded discontinuation phase did produce lower relapse rates.[51]

Psychological treatments. There are no controlled studies of psychological treatments for kleptomania. Case reports suggest that cognitive and behavioral therapies might be effective:

- A young man who underwent 7 sessions of covert sensitization, combined with exposure and response prevention, over a 4-month period was able to reduce his stealing frequency.[52]
- In another case, a young woman underwent 5 weekly sessions when she was instructed to practice covert sensitization whenever she had an urge to steal. She remained in remission for 14 months with only a single lapse in behavior and with no reported urges to steal.[53]
- In 2 patients, imaginal desensitization in fourteen 15-minutes sessions over 5 days resulted in complete remission of symptoms for a 2-year period.[54]

Conclusions. The single controlled study of naltrexone for kleptomania suggests that naltrexone might be a beneficial treatment for this disorder. No controlled trials of psychosocial interventions have been reported. The current psychological research is based primarily on case reports.

This state of affairs likely is because of (1) the low prevalence of kleptomania and (2) clinical difficulties in treating patients involved in illegal activities. Nevertheless, there is a need for systematic studies of treating this disorder; such studies could involve collaboration across multiple treatment centers because of the disorder's low prevalence.

Pyromania

Pyromania is characterized by (1) deliberate and purposeful fire setting on >1 occasion; (2) tension or affective arousal before the act; (3) fascination with, interest in, curiosity about, or attraction to fire and its situational contexts; and (4) pleasure, gratification, or relief when setting fires or when witnessing or participating in their aftermath.[3]

Although pyromania is thought to be a disorder primarily affecting men, recent research suggests that the sex ratio is equal among adults and may be slightly higher among adolescent females. Mean age of onset usually is late adolescence. Pyromania appears to be chronic if untreated.[55]

Urges to set fires are common and the fire setting is almost always pleasurable. Severe distress follows the fire setting, and persons with pyromania report significant functional impairment. High rates of co-occurring psychiatric disorders (depression, substance use disorders, other impulse-control disorders) are common among persons with pyromania.[55]

Pharmacotherapy. There are no randomized, controlled clinical trials examining pharmacotherapy for treating pyromania. There are no FDA-approved medications for pyromania.

In case reports, medications that have shown benefit in treating pyromania include topiramate, escitalopram, sertraline, fluoxetine, lithium, and a combination of olanzapine and sodium valproate. An equal number of medications have shown no benefit: fluoxetine, valproic acid, lithium, sertraline, olanzapine, escitalopram, citalopram, and clonazepam. A case report of an 18-year-old man with pyromania described successfully using a combination of topiramate with 3 weeks of daily CBT to achieve significant symptom improvement.[56,57]

Pyromania is a largely unrecognized disorder that causes significant psychological, social, and legal repercussions. Because few persons with pyromania volunteer information regarding fire-setting, it is important that clinicians recognize the disorder and screen patients appropriately. Various treatments have been helpful in case studies, but more

research on the etiology and treatment of the disorder is needed.[56,57]

Conclusions based on the literature

In disruptive, impulse-control, and conduct disorders, the systematic study of treatment efficacy and tolerability is in its infancy. With few controlled studies published, it is not possible to make treatment recommendations with confidence. There are no FDA-approved drugs for treating any of these disorders.

Nonetheless, specific psychotherapies and drug therapies offer promising options, but often are based on small studies, often in patient populations with prominent comorbidities, and have not been replicated by independent investigators. For all of these disorders, issues such as which psychotherapy or medication to use and the ideal duration of treatment cannot be sufficiently addressed with the available data.

In conjunction with emerging epidemiological data supporting a relatively high prevalence of disruptive, impulse-control, and conduct disorders, the small amount of data regarding effective treatments highlights the clinical need for additional research.

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Related Resources

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Drug Brand Names

Atomoxetine • Strattera
Carbamazepine • Tegretol
Citalopram • Celexa
Clonazepam • Klonopin
Clonidine • Catapres
D-amphetamine • Dexedrine
Divalproex sodium • Depakote
Escitalopram • Lexapro
Fluoxetine • Prozac
Guanfacine • Intuniv
Haloperidol • Haldol
Levetiracetam • Keppra
Lithium • Eskalith, Lithobid
Methylphenidate • Ritalin
Molindone • Moban
Naltrexone • ReVia
Olanzapine • Zyprexa
Oxcarbazepine • Trileptal
Quetiapine • Seroquel
Risperidone • Risperdal
Sertraline • Zoloft
Sodium valproate • Depacon
Thioridazine • Mellaril
Topiramate • Topamax
Valproic acid • Depakote

continued

Bottom Line

Empirically supported treatment options for impulse-control disorders currently are limited, because only select disorders have been studied across multiple trials. New research is needed to confirm possible treatment options and identify effective psychotherapeutic and pharmacological treatment alternatives.

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Pyromania is a largely unrecognized disorder that causes significant psychological, social, and legal repercussions

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Which psychotherapy or medication to use and the ideal duration of treatment cannot be sufficiently addressed with available data

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