# Obsessive-compulsive disorder in children and adolescents: treatment overview

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## ABSTRACT

Obsessive-compulsive disorder (OCD) in children and adolescents is a chronic disease characterized by a poor prognosis. Often it is detected months and even years after its onset. Comorbid disorders hinder specialized care of children and adolescents with this condition. This article includes recommendations for evaluation and a review of treatment of pediatric patients with OCD. Evaluation should include a diagnostic interview and assessment of symptoms and functional impairment using scales (Yale Brown and OCD impairment). Treatment should be multimodal, including medication and psychosocial interventions. Pharmacological treatment must consider comorbidity and is based on the use of antidepressants (clomipramine, sertraline, fluvoxamine, and fluoxetine) that are safe and effective over the long term, and other medications are explored such as rulizole. Psychosocial treatment includes psychoeducation and psychotherapy. Cognitive behavioral therapy (CBT) has shown efficacy in controlled clinical trials, and is considered the first therapeutic option by many experts and clinical guidelines. The objective of CBT is to enable the patient to control their thoughts and restore functionality. Factors affecting prognosis for response to treatment include family history of the illness, limited introspection, cognitive deficits, functional impairment, longer duration of the illness, and family accommodation to the patient’s symptoms.

This article proposes an algorithm that recommends beginning treatment with sertraline (12 weeks). If a response is not achieved, the algorithm proposes that another medication be used for 8 weeks. If this fails to produce an improvement, we recommend a CBT program. Once a response is achieved, the pharmacological treatment is extended for a period of one year.

## Conclusions

The treatment option of choice for pediatric OCD is SSRIs. Psychosocial interventions must be included and comorbid disorders must be treated.

**Key words:** Obsessive-compulsive disorder, pediatric, treatment, antidepressants, cognitive behavioral therapy.

## RESUMEN

El trastorno obsesivo-compulsivo (TOC) en niños y adolescentes es una enfermedad crónica caracterizada por obsesiones y compulsiones con mal pronóstico, que con frecuencia se detecta meses o años después de su inicio. Los trastornos comórbidos dificultan la atención especializada a niños y adolescentes con este padecimiento. El presente artículo incluye recomendaciones para la evaluación y una actualización del tratamiento de pacientes pediátricos con TOC. La evaluación debe incluir una entrevista diagnóstica, la valoración de los síntomas y el deterioro funcional por medio de escalas (Yale Brown y de deterioro por TOC). El tratamiento debe ser multimodal, contemplando medicamentos e intervenciones psicosociales. El tratamiento farmacológico debe considerar la comorbilidad y se basa en el uso de antidepresivos (clomipramina, sertralina, fluvoxamina y fluoxetine) eficaces y seguros a largo plazo, y se exploran otros medicamentos como el rulizol. El tratamiento psicosocial incluye la psicoeducación y la psicoterapia. La terapia cognitivo conductual (TCC) ha demostrado eficacia en ensayos clínicos controlados, y se considera la primera opción terapéutica en algunos consensos y guías clínicas; su objetivo es que el paciente sea capaz de controlar su pensamiento y restaurar su funcionalidad. Entre los factores pronósticos de la respuesta al tratamiento se encuentran los antecedentes familiares de la enfermedad, escasa introspección, déficits cognoscitivos, deterioro funcional, mayor duración de la enfermedad y acomodamiento familiar a los síntomas del paciente.

Este artículo propone un algoritmo que recomienda iniciar el tratamiento con sertralina (12 semanas). Si no alcanzara una respuesta, se propone emplear otro medicamento durante ocho semanas; si no se obtiene mejoria, se recomienda incluir un programa de TCC. Una vez alcanzada la respuesta, se extiende el tratamiento farmacológico durante un año.

## Conclusiones

El tratamiento de elección para TOC pediátrico son IRS. Se deben incluir intervenciones psicosociales y tratar los trastornos comórbidos.

**Palabras clave:** Trastorno obsesivo-compulsivo, pediátrico, tratamiento, antidepresivos, terapia cognitivo conductual.
INTRODUCTION

Obsessive-compulsive disorder (OCD) is a neuropsychiatric disorder that occurs in 1.9 to 3.5% of the general population. In recent years it has gained significance in childhood and adolescent psychiatry, due not only to the prevalence in children and adolescents, but to the fact that 30 to 50% of adults with OCD indicate that symptoms began during childhood. This group of patients presents with high levels of partial response to different treatments.1 Social, family, and school dysfunction generated by this disorder have been widely documented in clinical studies.2,3

In its report on global health, the World Health Organization reported that OCD was among the 20 main causes of years lost due to disability.4

Unlike the characteristics of the disorder in adults, children report obsessions less often, either because their level of cognitive development does not allow them to recognize obsessions as absurd or disturbing, or because the content of such obsessions frightens them.5 It has been reported that the onset of OCD occurs around 10 years of age. In 64% of cases there is a family history of the illness, and in 15% of cases onset of symptoms is associated with a stressful event.6 Symptoms persist in most patients and change over time, that is, they have a chronic and often dynamic course. Follow-up studies have shown that patients diagnosed with OCD during childhood present with several comorbid psychopathologies during adult life, such as anxiety disorders, affective disorders, and personality disorders (obsessive disorder, avoidant disorder, paranoid disorder).7

EARLY DETECTION

Despite the fact that OCD is now recognized as an illness, most general practitioners, and even mental health professionals working at the primary care level, are not trained to detect it, wrongly diagnosing patients with other anxious, affective, or personality disorders.8

Early detection is essential, since according to estimates from the World Health Organization, 57.3% of individuals who suffer from obsessive compulsive disorder have not received treatment.9 In addition, many patients suffering from this disorder do not seek care at mental health centers in time, because either they are unaware that their symptoms correspond to an illness, they are ashamed or afraid, they think that there is no treatment, they are incapacitated by the illness, or they fear the side effects of medication.10 A study conducted at a children’s mental health institution in Mexico City showed that 80% of patients diagnosed with OCD sought care due to the symptoms of their comorbid disorders and had little awareness of their obsessions and compulsions.11 Given this, timely identification of the disorder for diagnosis and treatment constitutes a challenge for public health.

When diagnostic suspicion of this disorder exists, it is recommended that a full psychiatric and general medical history be completed. There are many structured and semi-structured interviews in childhood and adolescent psychiatry, such as the Kiddie Schedule for Affective Disorders and Schizophrenia, present and lifetime version (K-SADS-PL),12 the Mini International Neuropsychiatric Interview for children (MINI-Kid)13 and the Semi-Structured Interview for Adolescents (ESA, in Spanish),14 which are useful tools for detection and confirmation of obsessive-compulsive disorder in pediatric patients, in addition to other comorbid psychiatric disorders.

When assessing the severity of symptoms and their impact on school, social, and family activities and patient self-care, instruments such as the Children’s Yale Brown Obsessive Compulsive Scale (CY-BOCS)15 and the Child Obsessive-Compulsive Impact Scale (COIS)3 can be used.

An additional challenge to early detection is the detection or at least suspicion in close family members, given evidence that shows that early onset (prior to 13 years of age) of psychiatric disorders such as obsessive-compulsive disorder carries higher risks in immediate family members, due to genetic similarities, and more modest response to conventional pharmacological and psychotherapeutic treatments, perhaps due to comorbidity and longer intervals between onset and detection, among other factors.16,17

TREATMENT

Treatments indicated for children and adolescents with OCD employ a multimodal approach that includes the use of medication and psychotherapeutic interventions, particularly cognitive behavioral therapy. The effectiveness of these options has been shown in meta-analytic studies.18

Pharmacological treatment is based on the use of antidepressants whose action mechanism includes selective serotonin reuptake inhibition (SSRI), as this group of medications has shown efficacy in short- and long-term treatment. According to Watson et al., the magnitude of the average effect of SSRI is 0.48 (this value refers to the average percentage of change in the group treated with active medication from baseline measurement to outcome).18 Some meta-analysis studies have indicated that the number needed to treat (NNT) is between four and six, that is, between four and six patients are needed so that the desired response to treatment occurs in one of them.16 This number is lower than that required to find response using these medications in the treatment of depression (NNT=9).19

To date, the Food and Drug Administration (FDA) of the United States has approved chlorimipramine, sertraline, fluvoxamine, and fluoxetine for treatment of OCD in this
mature cessation of treatment on the part of the patient, it can cause mouth, sedation, and constipation, which can cause premature cessation of treatment on the part of the patient, it can disturb cardiac conduction, requiring that electrocardiographic tests be conducted prior to and during treatment.

Given its efficacy and safety profile, serotonin may be a good option for treatment, as it has been reported with an effect size of .66. It must be administered for 12 weeks at therapeutic dosage before changing medication, as it has been shown that patients can present with response to SSRIIs after this time period.22-23

Although paroxetine has shown effect in studies backed by neuroimaging, this effect has not been greater than placebo in controlled studies. Citalopram was equally as effective as fluoxetine in a randomized six-week study, but to date there have been no placebo-controlled studies.

Recently, multiple lines of evidence on the physiopathology of OCD (brain imaging, genetic association, determination of neurotransmitter in the cerebrospinal fluid, and animal models) have implicated dysfunction in the glutamergic synapses in the cortico-striatal-thalamic-cortical circuit, which has led to the evaluation of drugs that modulate the glutameric transmission. Rulizole is a drug that inhibits the release of glutamate and stimulates the synthesis of nerve growth factors, such as the brain-derived neurotrophic factor (BDNF). This drug has demonstrated that it has adequate safety in an open study of 46 children that showed improvement according to the Clinical Global Impression Scale (CGI) and the CY-BOCS, leading to a double-blind, placebo-controlled study which is currently underway.29

Other medications include memantine, described as successful adjuvant therapy in case reports of severe pediatric OCD, dextro-cycloserine, a drug that in animal studies and open clinical studies favored termination of learning by exposure. It was tested as an adjunct to a behavioral intervention without finding significant differences as compared to placebo.31

Comorbidity should be taken into consideration with pharmacological treatment, as OCD is often comorbid with Tourette syndrome (27 to 60%), attention deficit hyperactivity disorder (ADHD, 33%), oppositional defiant disorder (ODD, 9 to 43%), depression (20 to 70%), generalized anxiety disorder (30%), separation anxiety disorder (50%), psychosis (30%), schizophrenia (26%), and bipolar disorder (36%). Comorbidity has an effect on response to treatment. It has been reported that the number of comorbid disorders, and particularly the presence of ADHD, ODD, and conduct disorder, is associated with poor response to treatment.35 As such, comorbid patients may receive the indicated drug in addition to the SSRI, for example, stimulants for ADHD.

PSYCHOSOCIAL TREATMENT

Psychosocial treatments of OCD include psychoeducation and psychotherapy. Psychoeducation employs measures aimed at building awareness in patients and their families on the characteristics of the illness, its causes, and treatment options. The objectives of psychotherapy include: 1) to improve awareness and understanding of OCD and its effects on daily life; 2) to provide opportunities to adjust to the environment according to the level of patient functioning; 3) to offer guidance to facilitate and promote interaction and positive parent-child behavioral patterns; 4) to offer an introduction as to how behavioral modification can be applied to handle behavioral problems; 5) to guide and inform on social, educational, and health assistance available. This is the first intervention that should be conducted once diagnosis is established. Psychoeducational intervention models include parents, patients, and other people involved in treatment, such as teachers. Psychoeducational programs have been used as part of multimodal treatment approaches for different psychopathologies, especially affective spectrum and adult disorders.36-38

Psychoeducation can be performed by social workers, psychologists, nurses, and psychiatrists, emphasizing that the illness is not matter of will and that long-term treatment does not create dependency on medications.

It is important to include teachers in the psychoeducational process, in order to provide the patient with support. Teachers should be instructed to identify the abilities of the child and make use of these abilities during the school day, provide extended deadlines to complete school work, and even to allow the student to select projects if he/she has difficulties managing school work, or to arrive late to school if symptoms at home hold him/her up. It is also recommended that the number of assignments be adjusted to prevent the patient from becoming overwhelmed, thus avoiding academic stress.39

Cognitive behavioral therapy (CBT) is the most studied psychosocial intervention among children and adolescents with OCD. Its efficacy has been demonstrated in controlled clinical studies, and it constitutes the first therapeutic choice according to some experts and clinical guidelines. However, in Mexico and other developing countries, due to the lack of availability of specialists that can apply this therapy in psychiatric institutions and the high demand for services, this therapy is a treatment reserved for patients that are already receiving medication and require other interventions to increase control of symptoms. The objective of this treatment is that the patient can be able to control
their symptoms and reestablish functioning through a 10- to 12-session program that includes learning of exposure techniques and response prevention.

Some cognitive behavioral therapy programs also include sessions for parents.41 The most complete programs include psychoeducation, cognitive training, exposure and response prevention and family sessions.42,43

CBT has been evaluated in comparison to pharmacological treatment, showing similar efficacy after 12 weeks and maintenance of improvements after 9 months.44 In a seven-year follow-up study the presence of OCD symptoms was examined in children and adolescents after having received both individual and group CBT. Results showed that 79% of patients that received individual therapy and 95% of those that received group therapy were free of symptoms.45 The POTS study examined the differences in response and remission for patients that were treated with sertraline, CBT, a combination of both, and placebo. The first three treatments were more effective than placebo, and the authors suggest that the combination may be most effective in achieving remission of symptoms.46

Recent studies have identified factors associated with a poor response to CBT. These are: poor ability for introspection, comorbidity with externalized disorders, cognitive deficits, functional impairment, accommodation of the family to the patient’s symptoms, greater duration of the disease, and family history of OCD.47-49

The authors reviewed existing evidence on the duration of treatment and the response criteria in controlled clinical trials, preparing clinical guidelines,50 which include an algorithm for comprehensive care of patients at children’s mental health centers (Figure 1). The algorithm is summarized as follows:

- In the initial interview, in addition to confirming diagnosis, the nature of the illness must be explained to the family as well as the need for psychopharmacological or combined treatment over the course of several months.44
- During the diagnostic interview, the severity of the disorder must be documented prior to beginning treatment.
- Psychopharmacological treatment begins with sertraline during 12 weeks.
- It is recommended that response be assessed using severity scales, defining response as a 25% reduction in symptoms as compared to baseline levels.
- In the event of partial response, it is suggested that cognitive interventions be added, and in the event of a non-response, a medication change should also be introduced.
- The second phase should last eight weeks before reevaluating response to treatment; at the end of this period, CBT can be added.

**Figure 1.** Treatment algorithm for OCD in children and adolescents.

**TREATMENT ALGORITHM**
• When a response is achieved, treatment should be maintained for one year.

CONCLUSIONS

The high prevalence of OCD in children and adolescents indicates the need to raise awareness among both the general population and health professionals that are most likely to come into contact with this population.

According to the review conducted, the treatment of choice in pediatric OCD is SSRIs. Despite demonstrating greater efficacy over SSRIs, chlorimipramine shows side effects and disadvantages in dosage. New pharmacological treatment options are undergoing study, some with promising results.

It is important to remember that treatment must include psychosocial interventions, such as psychoeducation and CBT. It is also important that treatment of comorbid disorders be considered at all times.

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REFERENCES


Conflict of Interest Declaration

Lino Palacios Cruz, MD has served on the advisory boards of Janssen, Novartis, and UCB. Currently he serves as a paid speaker for Eli Lilly and Janssen-Cilag. He has participated in and/or received payment for randomized controlled studies with Eli Lilly and Pfizer. In addition, he has received economic assistance from Janssen-Cilag to conduct clinical trials at the author’s initiative.

The other authors have no relationship with the pharmaceutical industry or other institutions that could result in a conflict of interest.