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Obsessive-Compulsive Disorder

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Introduction

Obsessive-compulsive disorder (OCD) is often a disabling condition consisting of bothersome intrusive thoughts that elicit a feeling of discomfort. To reduce the anxiety and distress associated with these thoughts, the patient may employ compulsions or rituals. These rituals may be personal and private, or they may involve others to participate; the rituals are to compensate for the ego-dystonic feelings of the obsessional thoughts and can cause a significant decline in function.

In The Diagnostic and Statistical Manual of Mental Disorders (DSM)-5, which was published by the American Psychiatric Association (APA) in 2013, Obsessive-Compulsive Disorder sits under its own category of *Obsessive-Compulsive and Related Disorders. Within* that are the following subcategories were placed:

- Obsessive-compulsive disorder (OCD)
- Body dysmorphic disorder (BDD)
- Hoarding disorder
- Trichotillomania
- Excoriation (skin-picking) disorder
- Substance/medication-induced obsessive-compulsive and related disorder
- Obsessive-compulsive and related disorder as a result of another medical condition
- Other specified obsessive-compulsive and related disorder
- Unspecified obsessive-compulsive and related disorder

A. Presence of obsessions, compulsions, or both:

Obsessions are defined by **(1)** and **(2)**:

1. Recurrent thoughts, urges, or images that are experienced, at some time during the disturbance, as unwanted, and that in most individuals cause marked distress
2. The individual attempts to suppress such thoughts, urges, or images, with some other thought or action (i.e., by replacing with a compulsion).

Compulsions are defined by **(1)** and **(2)**:

1. Repetitive behaviors or mental acts that the person feels driven to perform in response to an obsession.
2. The behaviors or mental acts aim at reducing anxiety or distress or preventing some dreaded situation; however, these behaviors or mental actions do not connect in a realistic way with what they are designed to prevent or are clearly excessive.

B. The obsessions are time-consuming or cause clinically significant distress or impairment in social, occupational, or

other important areas of functioning.

C. The obsessive-compulsive symptoms do not arise from the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition.

D. The symptoms of another mental disorder do not better explain the disturbance (e.g., excessive worries, as might be found in a generalized anxiety disorder; preoccupation with appearance, as seen in a body dysmorphic disorder; difficulty discarding or parting with possessions, as found in a hoarding disorder; hair pulling, as in trichotillomania a hair-pulling disorder; skin picking, as appears in excoriation [skin-picking] disorder; stereotypies, as found in a in stereotypic movement disorder; ritualized eating behavior, as found in eating disorders; preoccupation with substances or gambling, as seen in a in substance-related and addictive disorders; preoccupation with having an illness, as found in illness anxiety disorder; sexual urges or fantasies, as found in a paraphilic disorders; impulses, as seen in a disruptive, impulse-control, and conduct disorders; guilty ruminations, as occurs in a major depressive disorder; thought insertion or delusional preoccupations, as found in schizophrenia spectrum and other psychotic disorders; or repetitive behavior patterns, as found in an autism spectrum disorder).

Obsessions are defined as intrusive thoughts or urges that cause significant distress; the patient attempts to neutralize this distress by diverting thoughts or performing rituals. Compulsions are actions the patient feels pressured to do in response to the anxiety/distress producing obsessions or to prevent an uncomfortable situation from occurring. These compulsions may be illogical or excessive.[1]

The most common obsessions include fears of contamination, fears of aggression/harm, sexual fears, religious fears, and need to make things "just right." The compensatory compulsions for these obsessions include washing and cleaning, checking, reassurance-seeking, repeating, and ordering, and arranging.[2]

As OCD has the possibility of hindering one's social grown and development, the WHO lists OCD as one of the ten most disabling conditions by financial loss and a decrease in quality of life.[3]

Termed "obsessional neurosis" by Freud in 1895, OCD has had acknowledgment for centuries.[4] However, only recently has the DSM listed OCD as less of an "anxiety" disorder, and more of a disorder similar to hoarding, body dysmorphia, trichotillomania (hair-pulling disorder) and excoriation (skin-picking) disorder.[5] The use of modern technology has allowed us to map areas of the brain that have been affected by this disorder. These areas of the brain do not typically correspond with anxiety and fear as previously thought and further separate OCD as an "anxiety" disorder.[6]

Etiology

The exact cause of OCD remains unknown, but it is likely multifactorial. There is a genetic predisposition, as 45 to 65% of the variance of OCD is attributable to genetic factors.[2] In mice and human experiments, mutated NMDA mutated can cause an increase in OCD-like behavior. For example, mutations in the NMDA subunit "NR2" has been linked to fears of contamination and compulsive cleaning.[7]

An inability to cope with uncertainty, an increased sense of responsibility as well as magical thinking seem to predispose those to obsessive-compulsive habits.[3]

Earlier onset of sudden OCD that is preceded by a *Streptococcus* infection has been known as PANDAS (pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections). Just as Sydenham chorea can present as a sequela from Streptococcus infections, the theory behind OCD is similar in that the strep infection, through molecular mimicry, causes autoimmune antibodies against the basal ganglia leading to obsessive thoughts and compulsive habits.[3] However, the term PANDAS is falling out of favor in lieu of childhood acute neuropsychiatric symptoms (CANS), which allows the development of OCD in the pediatric population to be attributable to other sources than Strep, such as metabolites and toxins.[1]

OCD does appear to be heritable, confirmed by both twin and family studies. Research has shown that the heritability to be as high as 45 to 65% in children and 27 to 45% in adults.[8] Having a family with OCD increases the risk of developing OCD. OCD has links with other neurological disorders, particularly those that affect the cortico-striato-thalamo-cortico circuitry, such as Parkinson disease, Sydenham chorea, traumatic brain injury (TBI), Tourette syndrome, Huntington disease, and epilepsy, to name a few.[9][10]

Epidemiology

The lifetime prevalence of OCD is 1.6 to 2.3% in the community; point prevalence is 1%.[4][3][11] The average age of onset is 19.5.[1]

About 50% of those with OCD have the onset of symptoms in childhood and adolescence. It is unusual to have OCD initially present over the age of 40.[4]

The average time-to-treatment is 11 years.[11] There is speculation of delay in treatment, as those with OCD may be embarrassed with their intrusive thoughts, such as inappropriate sexual beliefs or ritualistic behavior.

Roughly 90% of those with OCD have coexisting psychiatric diagnoses, most commonly are anxiety disorders.[1]

Males present earlier, but in adulthood, more females are affected. Postpartum females are up to 2 times as likely than the general female population to develop OCD.[4]

Pathophysiology

As stated above, the exact cause of OCD is still a mystery.

By evaluating individuals who develop OCD after developing a brain lesion or stroke, we were able to localized OCD symptoms to certain areas of the brain.[6] Now, through fMRIs, DTI, and SPECT imaging, OCD has been observed to be linked to the cortico-striato-thalamo-cortical circuits, particularly the orbitofrontal cortex, the caudate, anterior cingulate cortex and thalamus.[6][7][11][12]

Toxicokinetics

Those who have OCD have a 7% risk of Tourette syndrome and a 20% chance of developing tics.[4] As the treatment for OCD involves selective serotonin reuptake inhibitors (SSRIs) and possible antipsychotics, adverse effects of these medications including but not limited to weight gain, tardive dyskinesia, and dystonia, must also be monitored.

History and Physical

When taking a thorough history of a patient to evaluate for OCD, one must ask if they have any ruminations or incessant intrusive thoughts that consume more time than they would like (less than 1 hour) or interfere with their life in any way. The same must be inquired about compulsions or repetitive behaviors such as desires to tap, count, reorganize, or behave in any manner that might but their mind at ease.[13] Look for rigid habits, aggressive outbursts, coercive behavior such as easily triggered angry reactions by trivial incitements.

Since there is a heritable component of the disorder, it is also essential to ask if any family members have been diagnosed or experience similar symptoms.

As OCD's course is waxing and waning, the severity of symptoms may vary. To receive a formal diagnosis, the DSM V required more than 1 hour/day to be consumed by the obsession or compulsions or that they cause significant daily stress.

The 12-month prevalence of OCD in the United States is 1.2%, with a similar incidence internationally (1.1 to 1.8%). Females are affected at a slightly higher rate than males in adults, although males are more commonly affected in childhood.

Those with OCD may present with evidence of their rituals, such as chapped hands from compensatory over-washing, or underweight from food restrictions secondary to contamination fears. It is important to have a keen eye for signs - those with OCD are unlikely to seek treatment early on as they may be ashamed of their obsession and compulsions.

Patient’s obsessions are ego-dystonic, and they may appear anxious when unable to neutralize their “fear."[14] This discomfort may appear to be similar to a panic disorder.[11]

Evaluation

It is essential to screen for the correct symptoms. A common tool is the Short OCD Screener. At six questions long and a sensitivity of 97%, it is a simple and effective way to screen patients for symptoms of OCD [2]. However, the most widely accepted tool to screen for OCD is the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) [14].

The Y-BOCS rates on a scale from 0 to 40 (40 being the most severe of symptomatology). [15] It requires the patient to rank, based on severity:

- The time occupied by obsessive thoughts and compulsions
- The interference of obsessive thoughts
- The distress of obsessive thoughts
- Resistance against obsessions
- Degree of control over obsessive thoughts
- The time occupied by compulsive behavior
- The interference of compulsive behavior
- The distress associated with compulsive behavior
- Resistance against compulsive behavior
- Degree of control over compulsive behaviors

Treatment / Management

The mainstay of OCD treatment is SSRIs and cognitive behavioral therapy (CBT) with Exposure and Response Prevention (ERP).

Historically the tricyclic antidepressant (TCA) clomipramine was used as first-line for OCD due to its strong predilection for serotonin. However, given the side effect profile, SSRIs have gained favor.[1]

ERP involves exposing the patient to their fears and having the patient resist the urge to perform a compulsion.[3] The goal is to restructure the mind and alter the habituation created by participating in the compulsion.[2][16] Success rates vary.

OCD is most commonly treated with SSRIs, and at much higher doses than used to treat anxiety or depression. FDA approved SSRIs include fluoxetine, fluvoxamine, paroxetine, and sertraline.[1]

Two primary neurotransmitters are thought to contribute to OCD: serotonin and glutamate. The serotonin hypothesis arose after OCD symptoms abated with the use of serotonergic antidepressants.

Glutamate has been gaining support as more data comes to light. The use of d-cycloserine (DCS), a partial NMDA receptor agonist (a glutamate receptor), has gathered attention as research has shown DCS to enhance extinction learning in animal studies. This information could potentially be useful in augmenting CBT.[2] Other medications currently investigated include memantine, lamotrigine, N-acetyl cysteine, ketamine, topiramate, glycine, and riluzole, though more studies are necessary to prove their efficacy.[7]

Antipsychotics have been entertained as an adjunct therapy. Aripiprazole, haloperidol (finding based on only one trial), and risperidone were significantly superior to placebo. In contrast, olanzapine, paliperidone, and quetiapine could not differentiate from placebo as measured by mean Y-BOCS total improvement.[3]

There have been instances of refractory cases having treatment with ablative lesion neurosurgery; however, there are no controlled trials. Deep brain stimulation has also been considered for severe cases of refractory OCD. Transcranial magnetic stimulation (TMS) has not proven successful in treating the disorder.[3]

In 1989 fluvoxamine was shown to be an effective treatment for OCD. Since the 1980s, there have been over 20 studies conducted to support the efficacy of SSRIs for the treatment of OCD. Thus far, they have found that fluvoxamine is not superior to other SSRIs as monotherapy.[13]

The following are appropriate drugs and doses typically used to treat OCD: fluoxetine 80 mg, escitalopram 40 mg, 300 mg fluvoxamine, and 100 mg paroxetine. Citalopram is no longer a recommended agent, given the risk of QTc prolongation in higher doses. Those treated with an SSRI for OCD will need a longer trial of 8 to 12 weeks on the medication as they typically take longer to respond than those receiving treatment for depression for a reason still

unknown.[13]

Clomipramine was approved for OCD in the late '80s but is no longer the first line to treat OCD, given its complicated side effect profile and the potential to elicit arrhythmias, seizures, and anticholinergic side effects, to name a few. Treatment with SSRIs can be augmented with the use of NMDA receptor antagonist Memantine. In a double-blinded controlled study in Iran, Memantine was beneficial; after eight weeks of treatment, there was a 100% response with 89% remission. Other medications that have been tried for OCD modulation via the NMDA receptors include topiramate, lamotrigine, ketamine, and riluzole, but so far, data has been inconclusive.[13]

Other medications being explored as augmentation therapy include ondansetron, tramadol, and amphetamines; however, no conclusive evidence can be drawn at this time.[13]

Deep brain stimulation is still a novel treatment, and due to the high costs and invasive nature of the procedure is not yet in routine use. Over the past 20 years, only 200 to 300 patients with OCD have received treatment with DBS. In an Amsterdam study published in October 2019, they found that DBS aimed at the ventral anterior limb of the internal capsule makes those with OCD more open to environmental change and can engage in more activities than their compulsions. In that study, they surmised that DBS is similar in theory to cognitive flexibility.[17]

CBT aims at altering malicious and harmful thoughts. In addition to CBT and ERP, the patient can employ mindfulness techniques such as meditation and relaxation. In a 2012 study that focused on Mindfulness-Based Cognitive Therapy, they found that two-thirds of their patients experienced a decrease in OCD symptoms over the course of 8 weeks. Unlike ERP, MBCT does not involve exposing patients to their fear intentionally. Still, when the stressful event arises, the patient is encouraged to take time and examine their thoughts and feelings during the unpleasant time. MBCT targets less the thoughts themselves, but more the attitude towards the obsession.[18]

Differential Diagnosis

The differential diagnosis for those with OCD includes but is not limited to autism, Tourette syndrome, social anxiety, schizophrenia, and hoarding disorder.[2][4]

Prognosis

OCD typically is a life long illness, though some experience a waxing waning course. Even with CBT and/or SSRIs, seldom do the symptoms ever resolve. Roughly 30% of patients refuse treatment, abort treatment, or fail to respond to treatment. Of those who have successful treatment, about 50% have residual symptoms. Co-occurring hoarding has a worse prognosis.[3]

In DSM-IV field trials of 431 patients, the fear of harming oneself was the most prevailing obsession. As reported by the Adult Psychiatric Morbidity Survey, an association between OCD and suicide has been established and predictably has links to comorbid anxiety, depression, and past suicide attempts. A cross-sectional study from January 2019 found that OCD and suicide are related regardless of symptoms of depression or mood instability.[19]

If OCD does not get treated, the course is typically chronic, and it may be episodic course, with a minority have a deteriorating course. With no treatment, remission rates in adults are low. Onset in childhood or adolescence can lead to chronic disease. However, 40% of individuals with onset of OCD in childhood or adolescence experience remission by early adulthood. Other disorders often complicate the course of OCD.

Complications

OCD is named one of the top ten disabling disorders by the WHO. Patients with OCD tend to avoid situations that make them uncomfortable. This fact may lead to a decrease in social interactions and a decreased quality of life. Most who struggle with OCD go undetected for years. If OCD goes untreated, the pattern is harder to break as structural changes to the brain take place.[6][16] Early intervention is vital.

Consultations

As CBT with Exposure and Response Prevention are the mainstay of non-pharmacological treatment, it is essential to consult a therapist well versed in this therapy.

Medical consultants depend on the severity and type of compulsion. For example, if hand washing is excessive, dermatitis may evolve, and the patient may need dermatological help. Treat the whole patient, not just the psychological symptoms.

It is important to coordinate care with the pediatrician and/or family doctor as medication side effects such as weight gain and tics should be monitored.

Deterrence and Patient Education

Patient insight is not lacking. Only 2% to 4% lack insight into their OCD.[5] However, most people do not seek treatment until well into their disorder. It is essential to ask the right questions and inform the right people, such as fellow medical personnel, as well as those in the school systems, as most of the symptoms present during adolescence.

Enhancing Healthcare Team Outcomes

OCD is a debilitating illness that often goes under-reported. It is important to screen patients for symptoms of the disorder. It is crucial to educate the medical professionals to be more aware, as well as those in the school systems, who typically work with adolescents. By localizing areas in the brain and honing in on the neurotransmitters specifically involved, we are making headway at further defining what OCD is. As OCD affects a significant portion of the population, having therapists equipped to handle the disorder is a must. It is our responsibility as health care professionals to raise awareness and make treatment options known. An interprofessional team of primary care providers, psychiatrists, psychologists, psychiatric nurses, social workers, and pharmacists improve outcomes. Pharmacists review prescriptions, provide patient and family education, and assist the team by checking for drug interactions. Clinicians can also consult with board-certified psychiatric pharmacists to most effectively prescribe the correct agents. Psychiatric nurses monitor patients, provide education, and communicate status updates to the team. With this interprofessional approach to care, OCD patients can experience improved outcomes. [Level 5]

Continuing Education / Review Questions

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