CLINICAL PRACTICE

Social Anxiety Disorder

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This Journal *feature begins with a case vignette highlighting a common clinical problem. Evidence supporting various strategies is then presented, followed by a review of formal guidelines, when they exist. The article ends with the author's clinical recommendations.*

A 28-year-old man reports feeling anxious and self-conscious around people in school, work, and social situations since his early teens. He appears shy and, on questioning, describes avoidance of speaking up in work meetings, attending social gatherings, and dating. He desperately wants to be more socially active but fears he will appear nervous and embarrass himself. How should he be evaluated and treated?

THE CLINICAL PROBLEM

Social anxiety disorder, also known as social phobia, is one of the most common psychiatric disorders, with a lifetime prevalence of 12%.[1] About half that prevalence represents persons who have the generalized type of the disorder, with fear or avoidance encompassing most social situations.[2] The remainder report fear and avoidance mainly limited to public speaking or other performance situations, representing the type of this disorder sometimes referred to as nongeneralized or performance-type social anxiety disorder. Table 1 summarizes the diagnostic criteria of the *Diagnostic and Statistical Manual of Mental Disorders,* 4th edition, text revision.[3]

Social anxiety disorder typically begins during the early teenage years[1,4] and is chronic. Although social anxiety disorder is more common among women than among men, approximately equal numbers of men and women seek treatment for it. Persons seeking treatment often have had symptoms for 10 years or more, and coexisting psychiatric disorders are common. Among such persons, the lifetime rate of phobias is greater than 50%; major depression and alcohol abuse occur in 15 to 20% of cases.[4]

Social anxiety disorder differs from shyness and performance anxiety in its greater severity, pervasiveness, and resultant distress and impairment.[5] Persons with social anxiety disorder may avoid important activities, such as attending classes and meetings, or attend but avoid active participation. They achieve less in school and work and are less likely to marry than people who do not have the disorder.[6] In primary care settings, social anxiety disorder contributes to poor functioning and missed work,[7] yet most cases go untreated.[8]

Both heredity and environment contribute to the development of social anxiety disorder.[9] Toddlers who appear to be shy and have inhibited temperament are at increased risk for the development of social anxiety disorder by the time they reach their teens, although the disorder does not develop in most shy children.[10] Overprotective and hypercritical parenting has been associated with social anxiety disorder, although the extent to which such parenting is a contributing cause, as compared with a response to a child with social anxiety, is unclear.[11] Neuroimaging studies in affected persons have shown increased reactivity in the amygdala to social cues, such as faces.[12] Other studies have shown abnormalities in serotonin and dopamine

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Table 1. Diagnostic Criteria for Social Anxiety Disorder.*

A marked and persistent fear of one or more social or performance situations involving exposure to unfamiliar people or possible scrutiny by others. The person fears that he or she will act in a way (or show symptoms of anxiety) that will be humiliating or embarrassing.†
Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a panic attack.†
The person recognizes that the fear is excessive or unreasonable.†
The feared social or performance situations are avoided or endured with intense anxiety or distress.
The condition interferes significantly with the person's normal routine, occupational (or academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.
The fear or avoidance is not due to the direct physiological effects of a substance or a general medical condition and is not better accounted for by another mental disorder.
If a general medical condition or another mental disorder is present, the social or performance fear is unrelated to it (e.g., the fear is not of trembling in Parkinson's disease).
Specify the disorder as "generalized" if fears include most social situations.

* These criteria were adapted from the *Diagnostic and Statistical Manual of Mental Disorders,* 4th edition, text revision, of the American Psychiatric Association.[3] All these criteria are required for the diagnosis.

† In children, there must be evidence of the capacity for age-appropriate social relationships, and the anxiety must occur in peer settings. The anxiety may be expressed as crying, tantrums, freezing, or shrinking from social situations. Children may not recognize that their fear is excessive. The duration of the condition must be at least 6 months.

systems.[13] Performance-type social anxiety disorder is associated with increased reactivity in the autonomic nervous system in feared situations.[14]

STRATEGIES AND EVIDENCE

EVALUATION

People who have social anxiety disorder often have anxiety in the presence of authority figures and are self-conscious when undergoing a physical examination. They may avoid mentioning their social anxiety because of shame or fear that it will not be taken seriously. A set of three screening questions regarding avoidance of embarrassment, avoidance of being the center of attention, and fear of being embarrassed or looking stupid have high sensitivity (89%) and specificity (90%) for the generalized type of social anxiety disorder, and responses indicating fear and avoidance (positive responses) should be followed by further inquiry (Table 2).[15]

The diagnosis of social anxiety disorder is made on the basis of the clinical presentation. Patients often report fear of embarrassment as well as more general fear of being evaluated negatively by others.[16] Many fear that others will notice their physical manifestations of anxiety, such as sweating, trembling, and blushing, and they overestimate the visibility of these features. Panic attacks may occur in social anxiety disorder, but unlike those in panic disorder, these attacks occur only in relation to current or anticipated social situations. Whereas worry and symptoms of anxiety are also characteristic of generalized anxiety disorder, in social anxiety disorder these features are associated predominantly with social situations.

In major depressive disorder, the coexistence of social anxiety disorder may increase the risk of suicide.[17] Patients with alcoholism and social anxiety disorder may particularly avoid group-based treatments, such as Alcoholics Anonymous, and may be more likely to have a relapse than those who do not have these two disorders concomitantly.[18]

In persons whose social anxiety and avoidance of social situations appear to be completely secondary to embarrassing symptoms of another medical condition such as essential tremor, stuttering, or obesity, the condition does not technically meet the diagnostic criteria for social anxiety disorder.[3] Nevertheless, persons with clinically significant secondary social anxiety may benefit from therapies used in the treatment of primary social anxiety disorder.[19]

TREATMENT

Established treatments for social anxiety disorder include cognitive–behavioral therapy and pharmacotherapy.[20,21] The primary goal of treatment is to reduce social anxiety to manageable levels, but even modest reductions in avoidance and discomfort may be highly valued by affected persons.

Cognitive–Behavioral Therapy

Cognitive–behavioral therapy for social anxiety disorder addresses the vicious cycle of anticipatory negative thoughts ("My voice will shake and the audience will think I'm crazy") and behaviors (e.g., avoiding practicing before speaking in public), leading to increased situational anxiety and maladaptive behavior (e.g., cutting the speech short) and to negative self-appraisals ("My speech was a disaster") and further avoidance behavior. Techniques for cognitive restructuring help the pa-

tient identify and question maladaptive thoughts and then develop alternative perspectives. Behavioral techniques known as therapeutic exposure introduce the patient to feared situations in a graduated fashion while the patient learns to use cognitive strategies, sometimes augmented by relaxation techniques, to manage anxiety.

Cognitive–behavioral therapy has been studied in individual and group formats and typically consists of 12 to 16 weekly sessions, each lasting 60 to 90 minutes. A workbook can provide supplementary educational materials and homework exercises.[22] The therapist and the patient devise a hierarchy of feared situations, which serves as a template for exposure exercises. The therapist trains the patient in cognitive restructuring. For example, persons who are fearful of speaking to others are helped to recognize that, even if they speak in a voice that shakes, others are unlikely to notice or care, and they can still get the point across. Patients also learn methods to use to replace unhelpful expectations ("I shouldn't be anxious at a party") with constructive behavioral goals ("I'll start two conversations at the party"). They practice using these methods while being exposed to feared situations in role-playing with the therapist and in homework assignments.

Numerous open and controlled trials involving patients who have generalized or performance-type social anxiety disorder have provided evidence of the efficacy of this approach, as compared with no treatment, educational support groups, and placebo.[20,22-31] Clinical improvement typically becomes apparent after 6 to 12 weeks of therapy and may progress over several months. In clinical trials, one half to two thirds of patients have been considered to have a response at 12 weeks (on the basis of global assessments that incorporate clinically meaningful improvements in social anxiety, avoidance of feared situations, and associated impairment in functioning).[23,24] In one study, at the 5-year follow-up, 89% of patients who had completed a course of cognitive–behavioral therapy were considered to have clinical improvement, as compared with 44% of control subjects who had completed a course of educational therapy.[32]

Pharmacotherapy

Placebo-controlled, randomized trials have demonstrated the efficacy of several classes of medication for the treatment of social anxiety disorder (Table 3). Most clinical trials have involved predominantly or exclusively patients with the generalized type of social anxiety disorder, in whom the high frequency and unpredictability of anxiety-provoking situations warrant standing daily doses of medication, rather than as-needed use of medication.

Table 2. Self-Administered Screening Questions for Generalized Social Anxiety Disorder.*

Rate each item according to the following scale:

0 = Not at all, 1 = A little bit, 2 = Somewhat, 3 = Very much, 4 = Extremely

1. ___ Fear of embarrassment causes me to avoid doing things or speaking to people.
2. ___ I avoid activities in which I am the center of attention.
3. ___ Being embarrassed or looking stupid is among my worst fears.

___ Total

* A total score of 6 or higher (positive predictive value, 52.6%; negative predictive value, 98.5%) suggests the need for further assessment of symptoms, associated distress, and impairment as the basis for a diagnosis of generalized social anxiety disorder. Questions are from the 17-item Social Phobia Inventory (SPIN).[15]

Selective Serotonin-Reuptake Inhibitors

The selective serotonin-reuptake inhibitors (SSRIs) and the serotonin–norepinephrine–reuptake inhibitor (SNRI) venlafaxine (Effexor, Wyeth–Ayerst) have emerged as first-line pharmacotherapy for the generalized type of social anxiety disorder. The efficacy and safety of these medications in the treatment of social anxiety disorder have been established in more than 20 randomized, controlled trials.[21,33] Response rates typically range from 50% to 80% after 8 to 12 weeks of treatment. However, studies of fluoxetine (Prozac, Lilly) in social anxiety disorder have had inconsistent results (one of three controlled trials showed efficacy).[25,27,34] Head-to-head trials comparing SSRIs with one another or with an SNRI have not demonstrated that any one medication is superior to the others in the treatment of social anxiety disorder.[35,36]

Treatment with an SSRI or an SNRI is commonly initiated at half the usual effective dose, and the dose is increased after 1 week (Table 3). The dose–response curve for these agents is relatively flat in social anxiety disorder,[37] but because some patients may benefit from higher doses, clinicians commonly increase the dose as tolerated in those who have no response after 4 weeks of the therapy. Although many patients report improvement during the first few weeks of treatment, more than

Table 3. Medications Used in the Treatment of Social Anxiety Disorder.*

Disorder and Medication	Initial Dose	Target Dose	Common Side Effects
	mg/day		
Generalized social anxiety disorder			
Selective serotonin-reuptake inhibitors (SSRIs)			Sexual dysfunction, headache, nausea, sedation, insomnia, sweating, withdrawal syndrome
Sertraline (Zoloft, Pfizer)†	50	50–200	
Paroxetine (Paxil, GlaxoSmithKline)†	10	10–60	
Paroxetine CR (Paxil CR, GlaxoSmithKline)†	12.5	12.5–75.0	
Escitalopram (Lexapro, Forest)	5	5–20	
Fluvoxamine (Luvox, Solvay)	50	50–300	
Serotonin and norepinephrine-reuptake inhibitors (SNRIs)			Same as for SSRIs; also hypertension
Venlafaxine XR (Effexor XR, Wyeth–Ayerst)†	75	75–375	
Monoamine oxidase inhibitors			Sedation, insomnia, hypotension, weight gain; low-tyramine diet required to prevent hypertensive reaction
Phenelzine (Nardil, Parke-Davis)	15	30–90	
Other antidepressants			Sedation, weight gain, dry mouth
Mirtazapine (Remeron, Organon)‡	15–30	30–60	
Benzodiazepines			Sedation, cognitive impairment, ataxia, withdrawal syndrome
Clonazepam (Klonopin, Roche)‡	0.25	0.50–4.00	
Other anticonvulsants			Sedation, ataxia, dizziness, dry mouth, nausea, asthenia, flatulence, decreased libido
Gabapentin (Neurontin, Pfizer)‡	600	900–3600	
Pregabalin (Lyrica, Pfizer)‡	300	600	
Nongeneralized social anxiety disorder (performance-type social anxiety disorder)			
	mg as needed§		
Beta-blockers			Hypotension, bradycardia
Propranolol (Inderal, Wyeth–Ayerst)	10	10–40	
Benzodiazepines			Sedation, cognitive impairment, ataxia
Alprazolam (Xanax, Pharmacia and Upjohn)¶	0.25	0.25–1.00	
Lorazepam (Ativan, Wyeth–Ayerst)¶	0.5	0.5–2.0	

* This list is not exhaustive, but it includes all medications approved by the Food and Drug Administration (FDA) for the treatment of social anxiety disorder and selected others for which there is evidence of efficacy in social anxiety disorder. Venlafaxine, phenelzine, mirtazapine, gabapentin, pregabalin, clonazepam, propranolol, and all the SSRIs other than paroxetine are classified by the FDA as Category C. Paroxetine, lorazepam, and alprazolam are Category D. CR denotes controlled release, and XR extended release.
† This drug is approved by the FDA for social anxiety disorder.
‡ Evidence for the efficacy of this medication in social anxiety disorder includes a single randomized, controlled trial.
§ Evidence for the efficacy of this medication in nongeneralized social anxiety disorder is inferred from randomized, controlled trials involving persons with undiagnosed performance anxiety.
¶ This drug is approved by the FDA for anxiety.

a quarter of those who do not have a response at week 8 may have a response during an additional 4 weeks of treatment at the same dose,[38] suggesting that an initial trial should last 12 weeks. Patients who have a response during those 12 weeks should receive maintenance treatment to minimize the risk of relapse. The usefulness of these medications during longer periods of treatment is limited in some cases by adverse effects, including sexual dysfunction and weight gain (Table 3).

Benzodiazepines

Although evidence of the efficacy of benzodiazepines in social anxiety disorder is more limited

than that for SSRIs and SNRIs, benzodiazepines are commonly used in the treatment of patients who cannot tolerate or do not have an adequate response to SSRIs or venlafaxine. The relatively long-acting benzodiazepine clonazepam (Klonopin, Roche), given daily in divided doses, appeared to be highly effective in generalized social anxiety disorder in a controlled trial (response rate, 80%) and in several open trials.[39] A single controlled trial of alprazolam (Xanax, Pharmacia and Upjohn) was inconclusive.[28] In most patients, tolerance rapidly develops to the sedative effects of benzodiazepines, but not to the anxiolytic effects. Long-term use (more than 2 weeks) may result in physical dependence, and abrupt discontinuation of the medication should be avoided because of the risk of rebound anxiety and withdrawal symptoms (including tremor, insomnia, and in rare cases, seizures). A gradual tapering of the dose of clonazepam (a decrease of 0.25 mg every 2 weeks), however, has been shown to be well tolerated by patients with social anxiety disorder.[40] Benzodiazepines are not recommended as monotherapy for patients who have major depression in addition to social anxiety disorder and should be avoided in patients with a history of substance abuse.

Other Medications

Gabapentin (Neurontin, Pfizer) and pregabalin (Lyrica, Pfizer) are structurally related anticonvulsants that have been reported to be significantly superior to placebo in reducing symptoms of generalized social anxiety disorder in single controlled trials, although response rates for each were less than 45%.[41,42] In a recent small, placebo-controlled trial, mirtazapine (Remeron, Organon), an antidepressant with a mechanism of action different from that of other available antidepressants, was shown to be effective at a fixed dose of 30 mg per day in women with social anxiety disorder.[43] The monoamine oxidase inhibitor (MAOI) phenelzine (Nardil, Parke-Davis) has been shown to be effective in social anxiety disorder in randomized clinical trials,[21,28,44] but it is generally reserved for the treatment of refractory disease because of the risk of severe hypertensive reaction to dietary tyramine or sympathomimetic medication. Moclobemide, a reversible inhibitor of monoamine oxidase A, appears to be safer than standard MAOIs, although meta-analyses have found it less effective in social anxiety disorder than the SSRIs[21]; it is not available in the United States.

MAINTENANCE THERAPY

Several controlled studies have shown that the initial clinical improvement seen with pharmacologic treatment generally persists during up to 12 months of maintenance treatment.[21,45,46] Discontinuation of pharmacotherapy after 5 to 12 months of treatment has resulted in relapse rates of 20% to 60% during follow-up periods of 3 to 6 months; discontinuation of therapy after only 2 to 3 months appears to result in higher rates of relapse than when therapy is continued for a longer period. Although more data are needed, these findings suggest that continuing medication for 6 to 12 months, followed by tapering and discontinuation, and then follow-up for relapse, is reasonable.

Randomized trials directly comparing cognitive–behavioral therapy with pharmacotherapy in populations with predominantly generalized social anxiety disorder have not demonstrated consistently greater efficacy for either approach,[24-28] although one meta-analysis of trials of 6 to 16 weeks' duration suggested that pharmacotherapy is superior in the short term.[23] Trials comparing the outcomes of these two approaches at 6 to 12 months after discontinuation of the therapy, however, have suggested that cognitive–behavioral therapy has more durable benefit.[24,45] Studies of combined cognitive–behavioral and pharmacologic treatment[24,25] have not demonstrated efficacy superior to that of either approach alone, although the combined treatment may be helpful for some patients.

Nongeneralized Social Anxiety

Medication may be useful on an as-needed basis in the treatment of patients with nongeneralized (performance-type) social anxiety disorder, whose feared situations (such as public speaking) occur predictably and with less than daily frequency (Table 3). Data to guide treatment in this setting are derived primarily from controlled trials involving persons with performance anxiety, rather than those who have received a formal diagnosis of performance-type social anxiety disorder.

Several studies suggest that beta-blockers such as propranolol (Inderal, Wyeth–Ayerst), taken as needed about an hour before a performance, may be helpful in performance-type social anxiety disorder.[47-49] Benzodiazepines may also be useful.[47] These are typically taken at least 30 minutes before a performance, and the effect of a single dose may last up to several hours. Although tolerance and

physical dependence are unlikely to develop when benzodiazepines are used less than daily, psychological dependence may occur, and the immediate side effects of sedation and cognitive dulling sometimes outweigh the anxiolytic benefits. With either beta-blockers or benzodiazepines, patients may benefit from being given a trial dose outside their feared situation to confirm tolerability.

AREAS OF UNCERTAINTY

RESISTANCE

Data from controlled studies are lacking to guide the optimal treatment of patients who do not have a response to an initial course of pharmacotherapy, and clinically useful predictors of response to particular therapies are also lacking. Clinical experience suggests that patients who do not have a response to one medication may have a response to another of the same or a different class or may benefit from cognitive–behavioral therapy. Clinical experience also suggests that a partial response to an SSRI or SNRI may be augmented by cognitive–behavioral therapy or by use of a benzodiazepine, gabapentin, or pregabalin. A MAOI is contraindicated in combination with an SSRI or SNRI because of the risk of the serotonin syndrome, which is characterized by neuromuscular and autonomic hyperactivity and agitation.

TREATMENT OF CHILDREN AND ADOLESCENTS

Social anxiety disorder in children and adolescents may sometimes be difficult to differentiate from age-appropriate social awkwardness, but treatment of persistent and impairing symptoms holds promise for restoring normal social development and preventing further impairment. Although the treatment of children has been studied less than the treatment of adults, cognitive–behavioral therapy appears to be effective in children and adolescents with social anxiety disorder.[50] Several placebo-controlled trials have also provided evidence of the efficacy of pharmacotherapy with an SSRI or SNRI for social anxiety disorder in children 6 to 17 years of age.[50] A recent report[51] of the increased risk of suicidal ideation among adolescents receiving SSRIs or SNRIs, although derived primarily from studies of depression in adolescence, suggests that youths prescribed these medications for social anxiety disorder must be closely monitored.

GUIDELINES

No formal guidelines for the management of social anxiety disorder have been issued by U.S. or European professional societies.

SUMMARY AND RECOMMENDATIONS

Social anxiety disorder is common, impairing, and responsive to treatment, yet it remains underrecognized. Randomized, controlled trials support the use of either cognitive–behavioral therapy or pharmacotherapy. For most patients, such as the one described in the vignette, I would initiate treatment with cognitive–behavioral therapy, given the data supporting its potential long-term benefit. SSRIs or venlafaxine are alternative first-line treatments for patients who prefer medication, have prominent coexisting depression, or lack access to a trained therapist. I would start with a low dose for 1 week, to minimize initial side effects, then increase it to the usual effective dose for several weeks, and if the response is incomplete, gradually increase to the maximal dose, as tolerated. Patients should be encouraged to try to increase their social activities gradually, and they may benefit from adjunctive use of self-help literature oriented toward a cognitive–behavioral approach. Because the data suggest a higher rate of relapse with a shorter duration of therapy, I would recommend that when medication is used it be continued for 6 to 12 months, followed by an attempt to taper and discontinue the medication, although the risk of relapse must be recognized. In patients with recurrent symptoms, treatment may be reinstituted for a longer period.

The Anxiety Disorders Association of America (www.adaa.org) and the National Institute of Mental Health (www.nimh.nih.gov) are good sources of information for patients. The site of the Anxiety Disorders Association of America includes listings of clinicians with expertise in the treatment of social anxiety disorder.

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