

## CASE REPORT

# Perospirone augmentation of escitalopram in the treatment of an adolescent sophophobia (fear of learning) patient

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**Abstract**

In this case report, an adolescent boy with sophophobia (fear of learning) is reported. Although psychoeducation about the condition was helpful to the patient, there was only a limited effect on his symptoms. Psychotropic treatment with escitalopram was initiated. He showed gradual improvement with this treatment, and there was only a limited effect on his symptoms. Hence, the patient was referred for psychotherapy, although he was unable to attend sessions. Augmentation with perospirone resulted in significant improvement. Research about pharmacological approaches to treat childhood and adolescent phobias is limited and requires further investigation.

**KEYWORDS**

adolescent, escitalopram, perospirone, sophophobia, specific phobia

## 1 | INTRODUCTION

Fear and anxiety are normal emotions in children during growth and development. In some cases, however, fear causes significant distress and functional impairment. Here, we present a case of sophophobia (fear of learning) in an adolescent patient, in whom augmentation of escitalopram with perospirone was useful. This is the first case report of sophophobia. Both the patient and his guardian provided permission to publish the features of his case, and the identity of the patient has been protected.

## 2 | HISTORY OF PRESENT ILLNESS

The patient was a 15-year-old boy. His family history was unremarkable. His prenatal, postnatal, and early developmental history was unremarkable. He had no history of mental illness or any previous psychiatric treatment. He had no history of smoking, drinking alcohol, or consuming any stimulants.

At the age of 14, studying elicited anxiety and panic-like symptoms, including shortness of breath, tightness in his chest, and palpitations. As a result, he began to avoid situations that required studying. He had visited another pediatric clinic where lorazepam was started at the dose of 0.5 mg/day, as needed. However, he showed only transient and partial improvement with lorazepam. Lorazepam was discontinued. Hence, he consulted our clinic at the age of 15.

## 3 | PHYSICAL EXAMINATION

His vital signs were stable and physical examination was unremarkable. His electrocardiogram (ECG) showed normal sinus rhythm. His full blood cell count and laboratory biochemical parameters were normal. He was not on any medications. He was referred to a pediatric cardiologist to rule out a cardiovascular pathology, but there were no abnormal findings, including on Holter ECG recordings.

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## 4 | MENTAL STATUS EXAMINATION

He was very alert in responding to questions and was cooperative. His mood was not depressed, but he seemed anxious. He denied any symptoms of mania, psychosis, and obsessions and compulsions. He also denied any suicidal thoughts.

However, he had been experiencing persistent and irrational fear whenever he began studying. He reported episodes of intense anxiety and shortness of breath associated with studying. He also felt fear about other people's judgment regarding his inability to learn as expected and felt ashamed about his fear. However, the main factor causing his fear was studying itself. He recognized that his fear was irrational. A full cognitive assessment (Wechsler Intelligence Scale for Children—Fourth Edition) was performed, which revealed normal intellectual functioning and no learning difficulty. There were no other environmental factors to explain his fear, including bullying at school. He was diagnosed with a specific phobia based on Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition (DSM-5) criteria<sup>1</sup> and was diagnosed with "sophophobia." His score on the Improving Access to Psychological Therapies (IAPT) Phobias Scale,<sup>2</sup> which is used to assess the severity of specific phobias from 0 (not at all) to 8 (very severely), with a cutoff of 4 or above indicating the presence of phobias, was 8 points, which is above the clinical threshold, at the beginning of his treatment.

## 5 | TREATMENT

The patient was provided psychoeducation about his condition and was taught guided relaxation techniques, which he found to be very helpful. However, there was only a limited effect on his symptoms. His score on the IAPT-specific phobia scale ranged from 6 to 8 points. After 3 months of treatment, escitalopram 10 mg/day was initiated. Increasing the dose of escitalopram was suggested, but he felt anxious about increasing the dose beyond 15 mg/day. Although he showed gradual improvement with this treatment, there was only a limited effect on his symptoms. At this time, his IAPT-specific phobia scale score ranged from 4 to 8 points. The patient was referred for psychotherapy, but he was unable to attend sessions. His symptoms had not improved, and he seemed to be so tense and exhausted. After 10 months of treatment with escitalopram, risperidone 0.5 mg/day was initiated as an add-on treatment to augment the escitalopram effect, although it was soon discontinued because it was ineffective and caused drowsiness. Instead, perospirone 4 mg/day was added. After 4 weeks, his fear had decreased significantly and did not interfere with his daily studying. His IAPT-specific phobia scale score was significantly improved to 0-2 points. He seemed calm and relieved. Increased feeling of calmness and relaxation was also reported from him and his family. Six months after beginning perospirone, his improvement has been maintained.

## 6 | DISCUSSION

The word sophophobia is made up of 2 Greek words, Sophia and phobia. Sophia means wisdom.<sup>2</sup> Thus, sophophobia is the fear of learning or of knowledge. According to the DSM-5, there are certain specific phobia types: animal, natural environment, blood-injection-injury, situational, and others. Sophophobia is categorized as a specific phobia under the "others" category.<sup>1</sup> However, sophophobia has only been rarely reported, and little is known about it. Bullying might be a cause of sophophobia, since a child who is bullied in school might be afraid of learning. In this case, the patient's parents did not report bullying. Sophophobia can also be triggered by a learning disability. In this case, the patient's intellectual functioning was normal and there seemed to be no other learning difficulty.

Previously, the efficacy of cognitive behavioral therapy (CBT) for the treatment of childhood- and adolescent-specific phobias was reported.<sup>3</sup> However, this patient was unable to attend psychotherapy sessions, probably because he found the CBT session similar to a "learning" situation. The evidence base for pharmacotherapy for childhood- and adolescent-specific phobias, either as stand-alone treatments or in combination with psychological treatments, is limited. Only one small monopharmacotherapy trial included youths with primary specific phobia diagnoses.<sup>4</sup> This trial examined the efficacy of fluoxetine treatment. Although Selective Serotonin Reuptake Inhibitors (SSRIs) represent first-line pharmacotherapy for anxious youths,<sup>5-8</sup> in pediatric anxiety disorders, escitalopram was superior to placebo in reducing anxiety symptoms.<sup>9</sup> Escitalopram was also well-tolerated, similar to other SSRIs, in pediatric anxiety disorders.<sup>10</sup> In this case, escitalopram was partially effective and had no obvious adverse effects, including activation.

Perospirone is an atypical antipsychotic available in Japan, that is a partial serotonin (5-HT)<sub>1A</sub> receptor agonist, and a 5-HT<sub>2A</sub>, dopamine (D)<sub>2</sub>, and  $\alpha$ -1 adrenergic receptor antagonist.<sup>11,12</sup> The 5-HT<sub>1A</sub> activation is observable in models of anxiety and depression.<sup>13</sup> The 5-HT<sub>2A</sub> receptors have opposing effects as the postsynaptic 5-HT<sub>1A</sub> receptors, which enhances the action of serotonin at the 5-HT<sub>1A</sub> receptors.<sup>14,15</sup> As a result, 5-HT<sub>1A</sub> agonistic and 5-HT<sub>2A</sub> blocking action may exert anxiolytic and antidepressant effects. Thus, augmentation of SSRIs with perospirone has been used in cases of refractory obsessive-compulsive disorder<sup>16,17</sup> and treatment-resistant major depressive disorders.<sup>18</sup> In this case, augmentation with perospirone resulted in clinical improvement with no obvious adverse effects, including extrapyramidal symptoms. The precise mechanism involved in adding perospirone to escitalopram and its effect on phobic symptoms is unclear; pharmacological effects of perospirone on 5-HT<sub>1A</sub> and 5-HT<sub>2A</sub> receptors may increase serotonergic activity which is considered in the improvement of phobic symptom. And  $\alpha$ -1 receptor antagonism which is associated with sedation may also be effective to calm and get relieved.<sup>19</sup>

Aripiprazole, characterized by partial agonism to D<sub>2</sub>, 5-HT<sub>1A</sub> and antagonism to 5-HT<sub>2A</sub>, may be beneficial in this case.<sup>20</sup> However, aripiprazole shows the lowest affinity to  $\alpha$ -1 adrenergic receptors



among all atypical antipsychotics,<sup>21</sup> which means less sedative effect. Tansospirone, characterized by partial agonism to 5-HT<sub>1A</sub>, may be also beneficial in this case<sup>22</sup>; however, with the combination of Tansospirone with SSRI, clinicians must pay attention to serotonin syndrome.<sup>23</sup>

Research on pharmacological approaches for treating childhood and adolescent phobias is limited. This case suggests the possible efficacy of a pharmacological approach to the treatment of phobias in young patients who do not respond to psychotherapeutic approaches. However, further research and investigation are needed on this topic.

#### CONFLICT OF INTEREST

The author declares no conflict of interest.

#### DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

#### APPROVAL OF THE RESEARCH PROTOCOL BY AN INSTITUTIONAL REVIEW BOARD

The ethics committee is not required to review case reports.

#### INFORMED CONSENT

The patient and his guardian gave written consent for publication of this case report.

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