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BRIEF REPORT

Emotional blunting associated with SSRI-induced sexual dysfunction. Do SSRIs inhibit emotional responses?

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Abstract

Anecdotal and published case reports suggest that some patients taking selective serotonin reuptake inhibitors (SSRI) experience diminution in emotional responsiveness. This study aims to define the individual components of emotion disturbed in these patients. Fifteen patients reporting SSRI-induced sexual dysfunction completed the Laukes Emotional Intensity Scale (LEIS), a questionnaire about various emotions. Compared to controls, patients reported significantly ($p < 0.05$) less ability to cry, irritation, care about others' feelings, sadness, erotic dreaming, creativity, surprise, anger, expression of their feelings, worry over things or situations, sexual pleasure, and interest in sex. Total score on the LEIS did not correlate with total score on the Hamilton Depression Rating Scale. In our sample, 80% of patients with SSRI-induced sexual dysfunction also describe clinically significant blunting of several emotions. Emotional blunting may be an under-appreciated side-effect of SSRIs that may contribute to treatment non-compliance and/or reduced quality of life.

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Introduction

While similar in efficacy to older antidepressants, the selective serotonin reuptake inhibitors (SSRIs) are generally considered to be better tolerated. SSRIs do not cause the same degree of anti-cholinergic or adrenergic side-effects, but they do cause sexual dysfunction, gastrointestinal disturbances (nausea or diarrhoea), sleep disturbance, and anxiety and/or restlessness (Delgado and Gelenberg, 1995). There is increasing concern over the high rate of sexual dysfunction (Delgado et al., 1999; Gelenberg et al., 2000), a side-effect that was greatly underestimated in early studies.

An unforeseen and common side-effect of some SSRIs may be emotional blunting, and like sexual dysfunction, its importance may be underestimated. Two recent case reports describe the emergence of blunted emotional behaviour during SSRI treatment (Hoehn-Saric et al., 1990; Oleshansky and Labbate, 1996) and another describes the use of SSRIs to diminish pathological crying (Panzer and Mellow, 1992). Blunting of emotion is not described as a potential side-effect of SSRIs in the *Physicians' Desk Reference*, however, the authors of this report noted that patients being treated with SSRIs would frequently complain of this.

To better understand the symptoms associated with this phenomenon, we systematically questioned patients treated with SSRIs about their subjective emotional experience before and after treatment. These unstructured interviews led to the development of a rating scale for SSRI-induced emotional blunting, the Laukes Emotional Intensity Scale (LEIS), and the results obtained using this scale are the subject of the current report.

Methods

Fifteen patients gave written informed consent to participate in this study that was approved by the Human Subjects Subcommittee of the University of Arizona College of Medicine. The patients were recruited from a study of patients reporting SSRI-induced sexual dysfunction (Gelenberg et al., 2000). Eligibility required that each patient meet the Diagnostic and Statistical Manual of

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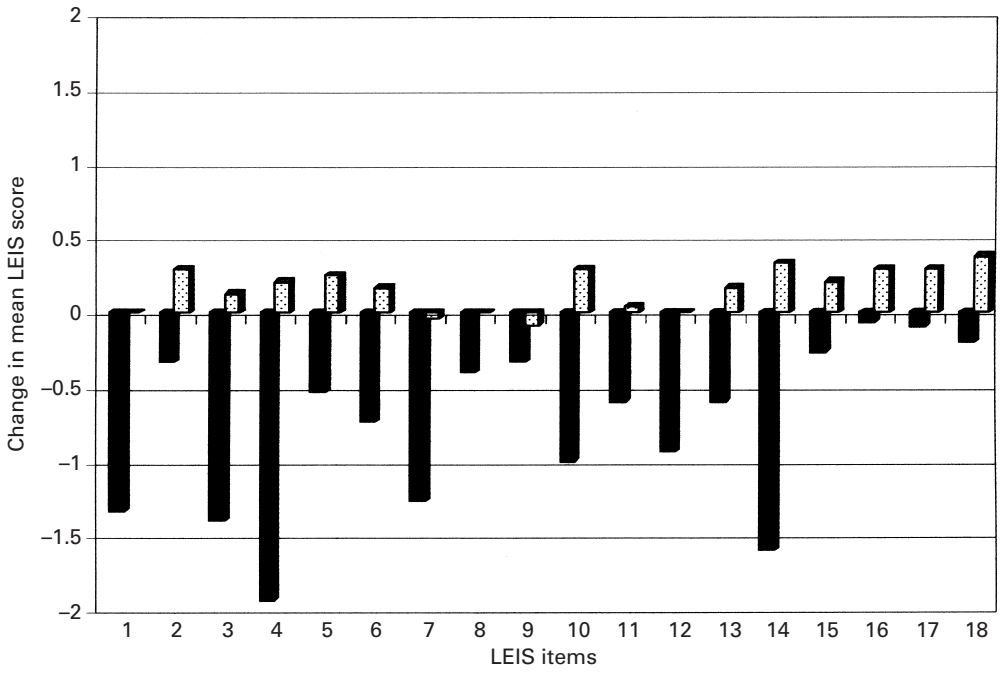

Figure 1. SSRI-induced emotional blunting assessed by Laukes Emotional Intensity Scale. ■, SSRI-treated subjects ($n = 15$); ⬚, control subjects ($n = 24$). *LEIS items*: 1, ability to cry; 2, feel motivated; 3, feel irritated or upset; 4, interested in sex; 5, care about others' feelings; 6, feel sadness; 7, have erotic dreams; 8, enjoy eating; 9, feel energetic; 10, have creativity; 11, feel surprise; 12, become angry; 13, expression of feelings; 14, pleasure during sex; 15, feel joy; 16, involved and interested in work; 17, experience worry; 18, feel assertive. *Change in mean LEIS score*: −2, a lot less; −1, somewhat less; 0, same as usual; 1, somewhat more; 2, a lot more.

Mental Disorders – Fourth Edition (DSM-IV) criteria for major depression, in remission, based on interview with the Structured Clinical Interview for DSM-IV (SCID), have a score of < 10 on the 25-item Hamilton Depression Rating Scale (HAMD), not meet DSM-IV criteria for another Axis I diagnosis, and report a history of sexual dysfunction having initial onset during the course of SSRI treatment. The patient group consisted of 10 women and 5 men (age 46 ± 11 yr) with five participants on fluoxetine (mean dose 40 ± 24.49 mg/d; mean duration of treatment 39.2 ± 26.19 months), five on paroxetine (mean dose 26 ± 15.17 mg/d; mean duration of treatment 18.8 ± 19.59 months), and five on sertraline (mean dose 100 ± 35.36 mg/d; mean duration of treatment 22.8 ± 5.02 months). A control group of 16 women and 8 men (age 38 ± 11 yr) was chosen from hospital employees. No diagnostic assessment was done on the control group. All subjects completed the ASEX (McGahuey et al., 2000), the 25-item HAMD, and the LEIS questionnaire. Patients completed all rating instruments prior to discontinuing SSRI treatment (Gelenberg et al., 2000).

The LEIS is a self-report instrument consisting of 18 questions rated in relation to the person's 'usual' state (see Figure 1) on a scored scale of 1 = a lot less, 2 = somewhat less, 3 = same as usual, 4 = somewhat more, and 5 = a lot more. Variance from the 'usual state' was calculated from the mean value of LEIS item responses scored as described in the legend of Figure 1. The questionnaire was presented to all subjects in the context of measuring sexual function and study participants were not aware of the specific hypotheses being tested.

Comparisons of total, and individual item, LEIS scores between patients and controls was done via analysis of variance (ANOVA). ANOVA was also used to examine whether differences between, and/or within, groups were related to SSRI type and patient gender. The relationship between total LEIS score and total ASEX score was assessed using Pearson's r. In order to gauge the contribution of sexual dysfunction to emotional blunting score, all analyses were repeated after elimination of the three LEIS items intended for the assessment of sexual dysfunction. Statistical comparisons were considered significant when $p < 0.05$.

Results

Figure 1 shows the relative change in emotion from the 'same as usual' based on mean scores for items 1–18 on the LEIS for patients and controls. Total mean LEIS scores

for patients (39 ± 8) were significantly lower than for controls (57 ± 3) (d.f. = 1,37, $F = 93.2$, $p = 0.00$).

For LEIS items 1–7, 10–14, and 17, subjects on an SSRI had significantly more blunted emotions than controls. ANOVA revealed that LEIS responses regarding work and energy levels were not significantly different ($p > 0.1$) between subjects and controls. Trends ($p < 0.1$) for statistical significance were seen in the responses for assertiveness, joy, and eating. Significant differences ($p < 0.05$) between subjects and controls were seen for all remaining items.

Individually, the frequency of patients experiencing diminished emotions (i.e. most significantly blunted), was 93% for interest in sex, 80% for sexual pleasure, 60% for inability to cry, 53% for erotic dreams, 50% for creativity, and 47% for becoming irritated or upset. No person in either the subject or control group scored > 10 on the HAMD, indicating absence of depression in our sample. Furthermore, there was no correlation between HAMD score and LEIS score.

Total mean LEIS scores for patients taking fluoxetine (37 ± 8), sertraline (43 ± 4.53), or paroxetine (38 ± 11) were not significantly different (d.f. = 2,12, $F = 0.73$, $p = 0.502$). ANOVA of mean LEIS scores for each item revealed no significant differences among medications, but trends ($p < 0.1$) for statistical significance were noted for inability to cry and creativity. It is interesting to note that all subjects taking fluoxetine rated feeling the ability to cry greatly reduced.

No significant differences in total mean LEIS scores were found between men (49 ± 10) and women (51 ± 11) among the entire sample (d.f. = 1,37, $F = 0.171$, $p = 0.682$), or between men and women in patient and control groups (d.f. = 1,37, $F = 0.000$, $p = 1.00$). Response to individual LEIS items also exhibited no significant differences based on gender.

Three of the five most significantly blunted emotions involved items assessing sexual interest, pleasure, and erotic dreams. Analysis of data without these items revealed that total mean LEIS scores remained significantly different between subject and control groups (d.f. = 1,37, $F = 47.53$, $p = 0.000$), and the difference remained proportionally similar. Total LEIS was positively correlated with total score on the ASEX ($r = 0.556$, $p < 0.05$).

Discussion

Up to 80% of the patients interviewed for this study described a treatment-emergent blunting of certain emotions. The symptoms identified range from decreased ability to cry to diminished subjective creativity. It is not clear to what extent the emotional blunting seen in the present report is also seen in patients taking non-SSRI antidepressants, or in patients taking SSRIs who do not also have sexual dysfunction. The data presented raise the possibility that SSRI-induced sexual dysfunction may include a broader range of symptoms than previously reported.

Several important methodological features limit the conclusions that can be drawn from the present study. These include the age and gender differences between controls and patients, the absence of additional control groups such as SSRI-treated patients without sexual dysfunction, and most importantly, that this was an open study with a relatively small number of subjects. Because of these limitations, it is possible that the patients who participated in this study may not have been representative of most patients taking antidepressants. Additionally, it is possible that patients and controls may have been biased to respond in the manner they did due to the way in which the questions were asked. Patients were not explicitly told that we believed emotional blunting could be expected, and they were recruited from a group of patients participating in a study of SSRI-induced sexual dysfunction. This may have predisposed them to answer positively on questions measuring other forms of dysfunction. Finally, our main outcome measure, the LEIS, lacks evidence of validity, as does the construct of emotional blunting. Before the full implications of the current report can be fully understood, future studies should be carefully designed to address the limitations inherent in the present report.

Despite these limitations, we have come to believe that the emotional blunting described in this report may be a relatively common side-effect of SSRIs. The consistent and enthusiastic reaction of colleagues to these data is most important. Presentation of the initial findings of this study at the Annual Meeting of the American Psychiatric Association (Delgado et al., 2000) engendered numerous anecdotal reports by clinicians who felt that this was a very common phenomenon in their clinical practice.

This has led us to speculate that sexual dysfunction, is in fact, just one of a larger set of emotional responses reduced as a result of the enhancement of 5-HT neurotransmission. The frequency of emotional blunting seen in the study sample is relatively high. Sixty percent of the patients in this study reported that they experienced the ability to cry 'a lot less than usual'. If milder forms of this phenomenon were included, the percentage of patients endorsing some degree of emotional blunting would be considerably higher. Emotional blunting was positively correlated with ASEX score but not with depression, and all of the patients in this study had HAMD scores well below 10. This indicates that the patients in this study were in clinical remission, suggesting that the emotional

blunting is neither due to residual depression nor a result of a partial antidepressant response.

Treatment-emergent blunting of emotions has been previously reported during SSRI treatment in patients who were being treated for other conditions. Previous reports have described a reduction in pathological crying in patients having had cerebrovascular accidents (Panzer and Mellow, 1992). A syndrome consisting of apathy and indifference has also been reported in five patients diagnosed with obsessive–compulsive disorder and treated with fluoxetine or fluvoxamine (Hoehn-Saric et al., 1990). These symptoms appeared dose-related and were clearly differentiated from a sense of sedation. Additionally, the patients in that study (Hoehn-Saric et al., 1990) clearly identified the symptoms of emotional blunting as being abnormal for them. A fluoxetine-induced frontal lobe syndrome, including symptoms of apathy, indifference, inattention, and perseveration was also reported in a patient with obsessive-compulsive disorder (Hoehn-Saric et al., 1991). The clinical presentation was associated with abnormal neuropsychological testing, and decreased frontal lobe blood flow on SPECT, both consistent with frontal lobe impairment.

How could SSRIs be inducing emotional blunting? One speculative thought is that SSRIs may be reducing the function of specific brain areas involved in emotional processing. An example of such an area is the anterior cingulate. A recent study suggests that regional brain metabolism, as measured by positron emission tomography, is reduced in the anterior cingulate of depressed subjects when compared to non-depressed subjects (Kennedy et al., 1997). This cortical region is associated with emotional expression, regulation of affect, and is modulated by dopaminergic, noradrenergic, and cholinergic systems. Increases and decreases in cingulate activity have been reported during depression and following treatment (Kennedy et al., 2001). Rather than restore normal function to this area, SSRI administration has been shown to further decrease activity in the anterior cingulate cortex (Ebert and Ebmeier, 1996). Finally, another study found that noradrenergic challenge increased anterior cingulate activity (Dubini et al., 1997).

This line of reasoning raises the possibility, albeit a speculative one, that emotional blunting may be related to reduced metabolism in the anterior cingulate or other limbic areas such as the amygdala. Additionally, it could be that certain groups of patients experience emotional blunting as part of the therapeutic effect, diminishing emotional responses to aversive life situations or stress. This may explain why some non-depressed patients with irritability (Elfenbein, 1995), patients with impulse control, or those with anxiety disorders improve with SSRI administration.

In summary, emotional blunting associated with SSRI treatment may be more common than previously thought. Further study is required to determine the frequency of this phenomenon, whether it is associated primarily with SSRI antidepressants, whether usually associated with the presence of sexual dysfunction, and what the functional implications of these symptoms are. We speculate that in some patients, rather than representing a side-effect, blunting of emotions may be the central therapeutic effect of SSRIs.

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