Emotional Effects of Sertraline: Novel Findings Revealed by Meditation

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Use of selective serotonin reuptake inhibitors continues to increase, as does concern about previously unrecognized, subtle side effects and questions about whether these drugs produce effects on healthy subjects. The authors report novel emotional effects identified by an experienced, psychologically healthy meditator who is a psychiatrist and researcher. On a meditation retreat, the subject identified a specific profile of emotional changes related to sertraline use. In particular, cognitive abilities and the emotions of fear and anger seem unaffected. However, the emotions of sadness, happiness, rapture, and love were dramatically reduced in intensity and duration.

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In recent years, the use of selective serotonin reuptake inhibitors (SSRIs) has increased dramatically, making them among the most commonly prescribed medications in medical practice. This increase reflects both pharmacological and social factors. In terms of pharmacology, compared to earlier antidepressant compounds, SSRIs have fewer side effects, lower lethality, and a broader spectrum of action. Social factors include an increase in the apparent incidence and severity of depression as well as increased social acceptance of antidepressant therapy by both patients and clinicians (Borch-Jacobson, 2002; Jain & Jain, 2002; Kramer, 1993; Olfson et al., 2002; Pignarre, 2001).

However, there is growing concern that SSRIs may have previously unrecognized, subtle side effects, such as apathy and cognitive blunting. The American Psychiatric Association Textbook of Psychiatry (Hales, Yudofsky, & Talbott, 1999) refers to “apathy syndromes,” characterized by “loss of motivation, increased passivity and feelings of lethargy and ‘flatness’” (p. 1038). More dramatic extensions of this phenomenon, such as a “frontal lobe” syndrome, have also been reported (Abel, Igbal, & Holzer, 1998; Garland & Baerg, 2001; Hoehn-Saric et al., 1991; Hoehn-Saric, Lipsey, & McLeod, 1990; Opler, Ramirez, & Lee, 1994).

Recent research has also examined whether these medications exert effects on people who are not suffering from Axis I diagnoses. Goodwin (1997) expressed the belief that any drug that alters abnormal personality is likely to alter normal personality as well. However, to date, the research data have been mixed. One study found no effects of fluoxetine on self- and observer-rated measures of mood, general well-being, or quality of life in healthy subjects (Gelfin, Gorfine, & Lerer, 1998). Conversely, paroxetine reduced measures of negative affect and hostility and increased scores on social affiliation in healthy subjects (Knutson et al., 1998). A third study found that paroxetine and sertraline induced impairment in measures of cognitive, attentional, and psychomotor function in healthy, older adults, even though none of these subjects complained of related difficulties (Sherman, 2002). Clearly, there is cause for concern about possible subtle psychological side effects.

A novel approach to investigating subtle effects of SSRIs is to utilize subjects with exceptional introspective abilities. Considerable evidence now supports classic claims that meditation practice may significantly enhance perceptual capacities. Perceptual sensitivity, discrimination, processing speed, and empathy all appear to be enhanced, as measured by, for example, reaction time, evoked potential, Rorschach, tachistoscopic, and phenomenological reports. These perceptual changes are associated with a wide variety of psychological, biological, and therapeutic effects, including changes in dopamine activity (for reviews, see Kjaer et al., 2002; Murphy & Donovan, 1997; D. Shapiro & Walsh, 1984; S. Shapiro et al., 2002; S. Shapiro & Walsh, 2003; Walsh, 2000; Walsh & Vaughan, 1993; West, 1987). We therefore offer a case study of an experienced meditator who reported intriguing effects of sertraline on meditation experiences and affect.

Method

The Subject

The subject, Roger Walsh, was a 51-year-old caucasian male trained in medicine, psychiatry, and neuroscience who had practiced meditation for over 20 years. That the subject had developed a degree of perceptual and introspective sensitivity is suggested by the amount of meditation practice, teachers’ evaluations, his phenomenological reports, and the results obtained when he was a subject in a study of meditators’ perception (Brown & Engler, 1986a, 1986b; Walsh, 1977, 1978). He was in good physical and mental health, except for a diagnostically undefined gastric motility disorder, for which SSRIs were prescribed. A trial of fluoxetine resulted in disabling side effects of lethargy, abulia, and amotivational syndrome.

He was subsequently switched to 50 mg sertraline daily and remained on this for a year. The only side effects identified during this time were mild insomnia, occasional anorgasmia, and reduced frequency and intensity of peak experiences. Peak experiences are brief altered states of conscious-
ness marked by feelings of ecstatic affect and a transpersonal self-sense, that is, a self-sense extending beyond the usual personal, egoic, and somatic boundaries. Peak experiences can occur spontaneously in anyone but are especially common in psychologically healthy individuals and in long-term meditators (Maslow, 1971; Alexander, Rainforth, & Gelderloos, 1991).

The Brahma Vihara Meditations

The subject did a 3-week retreat to practice the Buddhist brahma vihara meditations, 2,500-year-old practices that focus on transforming emotions (Goleman, 1988; Tin, 1975; Walsh, 1999, 2000). The brahma vihara practices employ the continuous recitation of appropriate phrases to cultivate emotional qualities, such as love and compassion. Done continuously over days or weeks, the effects can be dramatic. The desired emotions, such as love, may develop to remarkable degrees, as may accompanying emotions, such as happiness and rapture,¹ and related qualities, such as concentration and calm.

In these meditative states, the mind is described as remarkably pliant or malleable. Just as a person trained in relaxation can rapidly elicit an experience of calm, so, too, an experienced brahma vihara meditator is said to develop “mental pliancy” and can quickly elicit specific mental qualities, such as those just described (Epstein, 1975; Nyanaponika, 1998; Tin, 1975).

Results

For the first 6 days of the retreat, the subject continued to take 50 mg sertraline daily. For the next 5 days, he reduced this to 25 mg as part of a preplanned gradual withdrawal to observe how the gastric motility disorder responded. During these initial 11 days (6 on 50 mg and 5 on 25 mg), he observed that the effects of the brahma vihara meditations were very dramatically less marked than in previous retreats he had done of this kind. In particular, the emotional qualities of happiness, rapture, and love, which previously had been intense to the point of ecstasy, were now far less intense and faded more rapidly than in the past.

After 11 days, the subject realized that this difference might be due to the sertraline. He therefore immediately began a systematic exploration of its subjective effects and, after a day, ceased taking the medication. This exploration made use of the mental pliancy—the ability described above that brahma vihara meditations confer—of eliciting certain mental qualities at will.

A specific profile of medication effects on mental qualities and capacities was observed. There were no discernable effects on nonemotional factors. For example, when the attentional and cognitive factors of concentration, initial attention, and sustained attention² were elicited, they appeared to arise to their normal degree and then to follow their usual pattern of diminishing slowly over a matter of minutes. The same was true of the emotions of fear and anger.

However, a very different intensity and time course were observed for the four emotions of sadness, happiness, rapture, and love. When deliberately elicited, each of these emotions began to arise as usual and could be clearly experienced. However, within a matter of seconds and before peaking, they simply disappeared and could no longer be felt. In particular, the three positive emotions of happiness, rapture, and love are usually extremely strong and enduring during brahma vihara retreats, far more powerful than at any other time. However, on this retreat, while the subject was taking sertraline, they were dramatically less intense and less long lasting than in any previous retreat.

Ceasing and recommencing sertraline provided further observations. After the subject ceased all sertraline, the emotions of sadness, happiness, rapture, and love slowly reverted to their usual intensity and patterns. At the end of 5 days, there was significant, though still partial, normalization. However, during those 5 days the subject’s gastric motility disorder exacerbated significantly, and on the 5th day he resumed 50 mg sertraline per day. Over the remaining 3 days of brahma vihara practice, the four emotions of sadness, happiness, rapture, and love once again regressed to less intense and less enduring profiles. The net result of this cessation and recommencement of medication was a tidy, albeit inadvertent, three part ABA single-case study design, a design that is particularly valuable for assessing intervention effects in single individuals (Masters, Burish, Hollon, & Rim, 1987).

Discussion

Limitations of This Study

There are clearly significant limitations to this study. First, it was a single-case study using only subjective measures. Future studies would benefit from using multiple subjects and both subjective and objective measures. Second, the ABA design, though valuable, was suboptimal, as the 5-day washout B phase and the final C phase, in which sertraline was reintroduced, were both relatively short. Third, the fact that the subject is a psychiatrist may perhaps make his observations more clinically astute but also raises the possibility of expectancy effects.

However, there are several factors that suggest that the observed changes were significantly more than expectancy effects. These include the dramatic nature and intensity of the changes and their specificity. In addition, the subject had not noticed any emotional effects during the previous year or on a previous retreat doing a different kind of meditation and so was not expecting emotional effects to emerge at this late stage.

Despite these significant limitations, the study offers unique opportunities and data. These include the rare—indeed, unique—combination of observations by a mental health professional with long-term introspective training, identification of a novel and highly specific profile of SSRI-induced emotional effects, and the finding that these effects were observable only during a specific kind of intensive meditation practice.

Psychopharmacologic Implications

This report holds several implications. First, it suggests that constrictive emotional side effects can begin at low doses, indeed, at what would be considered an appropriate “starting” dose of sertraline. Second, this report demonstrates how subtle and difficult to detect these side effects can be, as the subject first identified

¹ Rapture is an intense joy or ecstasy associated with concentrated, clear awareness, accompanied by pleasurable somatic sensations and piloerection (goose bumps).

² The classical Pali terms found in meditation texts for these mental capacities are ekagatta (concentration), vitakka (initial attention), and vicara (sustained attention).
the decline in affective range only while on a meditation retreat. Thus, although the subject did not experience the full frontal lobe syndrome described in some articles, he did note a drastically reduced ability to attain exceptionally positive and salutary emotions and states of mind. Third, this article, therefore, corroborates previous reports regarding affective constriction but extends previous findings by pointing to a specific profile of affective changes.

Fourth, the present report suggests that sertraline and perhaps other SSRIs may inhibit some exceptionally positive and salutary emotions and states of mind, such as those cultivated by contemplatives. Fifth, there is a disconcerting possibility that some of the inhibition may be chronic. In part because of his long-term meditation practice, the subject was used to periodically experiencing highly valued peak experiences during daily life. These were reduced in frequency and intensity while he was taking sertraline, and this reduction seemed to continue, and only slowly recover, over a period of several years.

Sixth, because the subject was not suffering from an Axis I mood or anxiety disorder, these observations corroborate reports that SSRIs may induce psychological effects in healthy individuals (Knutson et al., 1998; Sherman, 2002). However, this report also extends Knutson et al.’s findings to include more subtle negative changes as well as the positive ones they described. Furthermore, the highly specific profile of emotions affected is consistent with the claim that these agents could provide researchers with powerful tools for the ‘pharmacologic dissection’ of distinct phenomenological aspects of normal personality (Knutson et al., 1998).

The seventh pharmacological implication concerns meditators needing antidepressants. There are now several million meditation practitioners in the United States alone, and this population seems particularly resistant to using medications, in part because of concerns about possible costs to their practice and in part because of lack of available information on such effects (Carr, 1999; Epstein, 1993; Moon, 2001; Victor, 1996, 1999). The present study suggests that there may be possible costs but that they may perhaps be limited to specific types of meditation.

Using Meditators for Psychopharmacological Research

For much of the 20th century, introspection was anathema to experimental psychology but essential to clinical psychology and psychiatry. Within recent years, the balance has shifted, and introspection is increasingly recognized as a valuable, even essential, component of psychological and neuroscientific research (Flanagan, 1991, 1997; Varela & Shear, 1999; Wallace, 2000). In addition, it has been suggested that individuals trained in both science and introspective disciplines, such as meditation or yoga, might prove especially valuable subjects (Tart, 1972, 1975; Wallace, 2000). This study supports these ideas and also suggests that meditators may be valuable subjects for psychopharmacological research.

However, this study also suggests that the type of meditation may be crucial and that there may be a Drug × Type of Meditation interaction. The subject had done a year of daily practice and a 10-day retreat using a Buddhist awareness meditation (Vipassana) without at the time identifying any marked effects of sertraline. It was not until he did intensive brahma vihara meditation—a specific emotion-inducing practice—in retreat that the drug’s emotional effects became strikingly obvious. Only in retrospect did he recognize as a drug effect a slightly heightened sense of equanimity during the previous year and Vipassana retreat.

This equanimity was confirmed independently by two people. A meditation instructor spontaneously commented that the subject’s experiences seemed just like those of someone doing an equanimity meditation practice. Likewise, the subject’s wife, herself a psychologist, spontaneously retrospectively described the subject as having been “more mellow and easier to get along with” while he had been on sertraline. This suggests that family members may sometimes be more sensitive to subtle behavioral changes than are the subjects themselves and that interviewing family members may be a valuable research strategy for detecting such changes.

If the subject’s experiential and behavioral changes do reflect a drug-induced increase in equanimity—or what the psychiatrists Zetzel (1970) and Kramer (1993), respectively, called affect tolerance and experience tolerance—this would be consistent with a recent study of meditators taking antidepressants who claimed that one of the drug’s most dramatic effects was to enhance equanimity. These reports of heightened equanimity, both in this article and in the group study, suggest that an increase in equanimity might be a factor accounting for the remarkably broad-ranging therapeutic benefits of SSRIs (Bitner, Hillman, Victor, & Walsh, 2003).

The subject’s initial failure to recognize drug-induced subjective changes is consistent with the growing concern that there may be a wide range of subliminal psychological side effects of pharmacological agents that usually go unrecognized—for example, possible effects of some cholesterol-lowering drugs on attention, dexterity, and car accidents (Muldoon, 1997). Perhaps meditators and other introspectively trained subjects may be able to detect subtle side effects and alert researchers to variables warranting systematic study.

Conclusion

Though limited by its single-case design, this report suggests a number of important possible implications. (a) Pharmaceuticals may induce a variety of usually subliminal side effects, (b) meditators may be able to recognize some of these and alert researchers to them, and (c) different types of meditation may be differentially effective in revealing these side effects. (d) SSRIs may have effects—including affective constriction—on psychologically healthy individuals, (e) may produce a specific profile of effects on different affects, and (f) may limit the intensity not only of strong negative emotions but of strong positive emotions also. These implications suggest that more sophisticated studies of meditators—such as double-blind, placebo-controlled designs employing both subjective and objective measures—are warranted to attempt to detect subtle psychological effects of pharmaceuticals.

References


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