A Randomized Clinical Trial of Cognitive-Behavioral Group Therapy and Sertraline in the Treatment of Obsessive-Compulsive Disorder

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Background: Cognitive-behavioral group therapy (CBGT) and serotonin reuptake inhibitors have proven efficacy in reducing symptoms of obsessive-compulsive disorder (OCD). There is no consensus about which of these forms of treatment is more effective. This study was conducted to evaluate the efficacy of CBGT as compared to that of sertraline in reducing OCD symptoms.

Method: Fifty-six outpatients with an OCD diagnosis, according to DSM-IV criteria, participated in the randomized clinical trial: 28 took 100 mg/day of sertraline and 28 underwent CBGT for 12 weeks. Efficacy of treatments was rated according to the reduction in scores on the Yale-Brown Obsessive Compulsive Scale (YBOCS) and the Clinical Global Impressions-Severity of Illness scale. The trial was performed in 4 successive periods from March 2002 to December 2003.

Results: Both treatments were effective, although patients treated with CBGT obtained a mean YBOCS reduction of symptoms of 44%, while those treated with sertraline obtained only a 28% reduction ($p = .033$). Cognitive-behavioral group therapy was also significantly more effective in reducing the intensity of compulsions ($p = .030$). Further, 8 patients (32%) treated with CBGT presented a complete remission of OCD symptoms (YBOCS score ≤ 8) as compared to only 1 patient (4%) among those who received sertraline ($p = .023$).

Conclusion: Cognitive-behavioral group therapy and sertraline have shown to be effective in reducing OCD symptoms. Nevertheless, the rate of symptom reduction, intensity reduction of compulsions, and percentage of patients who obtained full remission were significantly higher in patients treated with CBGT.

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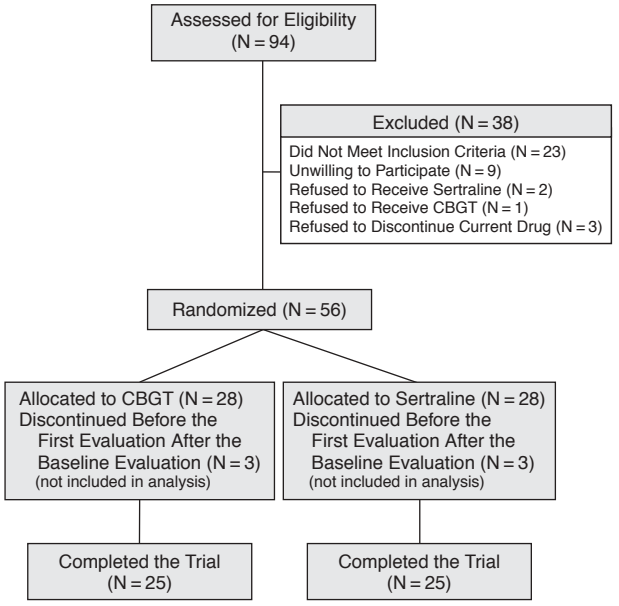
Obsessive-compulsive disorder (OCD) is a common disease affecting approximately 2.5% of the population.[1] The disorder is usually a chronic condition that often begins before adulthood and generally continues throughout life.[2]

Serotonin reuptake inhibitor (SRI)–antidepressants and cognitive-behavioral therapy (CBT) are first-choice treatments for OCD.[3] There is no consensus on which of these 2 therapies is the most effective and for which patients. The situation becomes even more complex due to a probable heterogeneity of OCD.[4,5] Some studies were conducted with adult patients by comparing exposure and response prevention (ERP) therapy to clomipramine[6–8] and fluvoxamine.[9–11] Results, however, are controversial.

Exposure and response prevention behavioral group therapy has a similar efficacy to ERP individual therapy in reducing obsessive-compulsive symptoms.[12] Cognitive-behavioral group therapy (CBGT) has equally shown to be effective in the treatment of patients with OCD.[13]

Sertraline is a selective serotonin reuptake inhibitor (SSRI), and its efficacy in OCD treatment has already been proven in randomized clinical trials.[14,15] However, to the best of our knowledge, there have been no clinical trials comparing the efficacy of sertraline to ERP therapy in adults, as well as the use of sertraline to CBGT in reducing OCD symptoms.

Figure 1. Profile of Patient Flow From Recruitment Through Study Completion



Abbreviation: CBGT = cognitive-behavioral group therapy.

The objective of the present study was to compare the efficacy of CBGT to that of sertraline in reducing OCD symptoms and in improving the quality of life of patients with OCD.

METHOD

Subjects

Fifty-six patients with OCD agreed to participate in this randomized 12-week trial to receive sertraline or CBGT and signed informed consent forms. The study was approved by the Hospital de Clínicas de Porto Alegre Medical Ethical Review Committee (Porto Alegre, Brazil). Participants were female or male outpatients, aged between 18 and 65 years, who were diagnosed with OCD according to DSM-IV criteria. They were recruited through meetings in the community and by advertisements in the media. Patients were evaluated by clinical interview and by the Brazilian version of the Mini-International Neuropsychiatric Interview (MINI),[16,17] a structured interview that provides standardized assessment of the main psychiatric disorders of Axis I in accordance with the DSM-IV criteria, translated and adapted to Portuguese. Other inclusion criteria included a Yale-Brown Obsessive Compulsive Scale (YBOCS)[18] score ≥ 16 and being motivated and ready to accept the random assignment of CBGT sessions or sertraline use.

Exclusion criteria included suffering from Tourette's disorder, moderate or severe major depression, a score of more than 16 on the Beck Depression Inventory (BDI),[19] bipolar disorder, psychotic disorder, substance-related disorders within the past 6 months, and severe personality disorders assessed during clinical interview. Other reasons for exclusion from this study were organic brain disease, known allergy to sertraline, pregnant women and female patients with childbearing potential who were not using adequate methods of contraception, and not tolerating suspension or refusing to suspend use of an antiobsessive drug for at least 1 month prior to the beginning of treatment.

Of the 94 subjects assessed, 13 men and 43 women were selected. Among the selected patients, 14 (i.e., 7 participants in each group) were making use of some antiobsessive drug and interrupted usage for at least 1 month prior to the beginning of the study.

Six patients dropped out of the study before the first-month reevaluation (Figure 1). Three patients dropped out of the drug group: 2 for not tolerating the side effects of sertraline (one presented headache and the other had sexual dysfunction and gastrointestinal discomfort) and 1 for unavailability due to personal affairs. Three patients abandoned the group CBT: 1 woman quit for lack of motivation for CBT, 1 man due to professional commitments, and 1 woman due to having moved to another town.

Study Design

Twenty-eight patients were randomly assigned to CBGT treatment for 12 weeks through computer-generated random numbers assessed by a statistician not involved in the clinical trial. The other 28 patients were treated with 100 mg/day of sertraline for the same length of time.

Procedure

The trial was performed in 4 successive periods from March 2002 to December 2003 with 5 to 8 (mean = 7) patients participating in the group CBT (a weekly 2-hour session) and a similar number of patients taking 100 mg/day of sertraline. Cognitive-behavioral group therapy sessions were conducted by a psychiatric therapist with more than 10 years of experience in CBT. A previously used treatment protocol was applied.[13] Such protocol included psychoeducation, techniques of ERP, cognitive techniques to correct distorted thoughts and beliefs, and strategies to prevent relapses. Sessions were structured and included the prescription of individualized exercises at the end of each session.

Pharmacologic treatment consisted of weekly individual visits, each lasting 20 minutes, during which patients received sertraline for a 1-week period. Compliance with the treatment was assessed by observing the drug blisters from the previous week. During the visits, patients were provided with guidance as to the proper use of the medicine and were monitored regarding possible side effects. These patients did not receive any psychoeducational,

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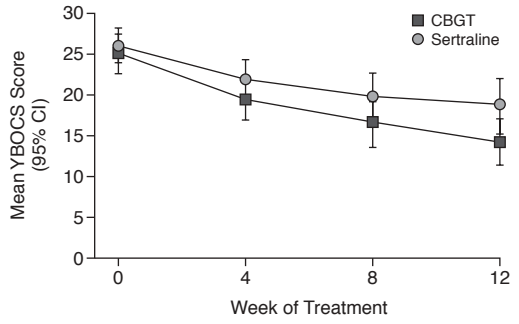
Figure 2. YBOCS Scores of Patients With Obsessive-Compulsive Disorder in Each Treatment Group During the 12-Week Study



Abbreviations: CBGT = cognitive-behavioral group therapy, YBOCS = Yale-Brown Obsessive Compulsive Scale.

behavioral, or cognitive intervention. In the first week of treatment, sertraline was administered in a dose of 50 mg/day, which was increased to the final dose of 100 mg/day from the second week on. All patients used the same dosage, without need for adjustments.

Two psychiatrists, trained in applying assessment scales and blind to the type of treatment the patients were undergoing, were used as independent evaluators during the entire period of the study. The psychiatrists were asked if they knew or guessed the treatment the patient was receiving, but their answers were not rated.

Ratings and Treatment Response

Patients were evaluated at weeks 0, 4, 8, and 12. The intensity of obsessive-compulsive symptoms was measured with the YBOCS.[18] Global clinical impression was assessed with the Clinical Global Impressions-Severity of Illness (CGI-S) scale.[20] The YBOCS and the CGI-S were translated to Portuguese and are extensively used by Brazilian authors with results consistent with the literature.[21–23] Depressive symptoms were rated with the BDI.[19] Anxiety symptoms were assessed with the Beck Anxiety Inventory (BAI).[24] Both scales were translated and validated to Portuguese.[25] Quality of life was evaluated with the World Health Organization Quality of Life-abbreviated version (WHOQOL-bref),[26] which is the abbreviated form of the WHOQOL-100. This self-administrated scale, translated and adapted to Portuguese, consists of 26 questions (with scores from 0 to 5) for assessing quality of life in 4 domains: physical, psychological, social relationships, and environment. The WHOQOL-bref was administered at baseline and after treatments.

Statistical Analysis

Subjects undergoing CBGT and those taking sertraline were compared before the treatment in relation to demographic variables and scores on scales assessing OCD severity, anxiety symptoms, depression, and quality of life by using the t test (independent samples) for continuous variables and the χ^2 test for nominal variables.

Treatment results were assessed by means of analysis of variance for repeated measures with scores obtained at 4 timepoints: before treatment and after weeks 4, 8, and 12. All patients assessed at least once after they began treatment were included in the statistical analysis of the results. The χ^2 test was used for dichotomous data (improved versus unimproved). A responder to treatment was defined as having a decrease of ≥ 35% in YBOCS score at the end of the study. Patients who responded to treatment were also classified as having complete remission if the YBOCS scores were ≤ 8 after treatment. The data are presented as mean ± SD at a 5% level of significance. All statistical analyses were conducted by using the SPSS statistical package, version 10.0 (SPSS Inc., Chicago, Ill.).

RESULTS

Demographic and Clinical Characteristics

The sample included 43 women and 13 men with a mean age of 38.5 years (SD = 11.79) who presented obsessive-compulsive symptoms for a mean period of 23.5 years (SD = 11.57) with a mean age at onset of 15 years (SD = 7.58). Of these patients, 23 (41%) had adequate previous pharmacologic treatment with serotonergic antidepressants, at least during 3 months in adequate doses according to March et al.[3]: 4 patients took sertraline and others took clomipramine (N = 3) and venlafaxine (N = 2). Of the 23 patients, only 7 had 2 adequate trials with SSRIs. No patient had undergone CBT prior to the study.

The groups did not show statistical difference in basal assessment of symptoms or in any criteria: age ($t = 1.621$, $df = 54$, $p = .111$), distribution by sex (Fisher exact test, $p = 1.00$), age at disease onset ($t = 0.157$, $df = 54$, $p = .876$), duration of illness ($t = 1.765$, $df = 54$, $p = .083$), and previous treatment for OCD ($\chi^2 = 0.072$, $df = 1$, $p = .789$).

Change in Obsessive-Compulsive Symptoms

Both CBGT and sertraline were effective in reducing obsessive-compulsive symptoms. However, there was a greater reduction in global scores on the YBOCS in patients treated with CBGT (from 25.08 to 14.28) as opposed to those treated with sertraline (from 26.12 to 18.76), even though this did not reach statistical difference ($F = 3.1$, $df = 1$, $p = .083$). Mean YBOCS scores obtained at the 4 timepoints during the 12 weeks of treatment are shown in Figure 2. The effect size in the YBOCS scale was 1.58 with CBGT and 1.18 with sertraline.

In the analysis of subitems of the YBOCS scale, a significant superiority of CBGT over sertraline in reducing

Table 1. Evolution and Comparison of Patients Receiving Cognitive-Behavioral Group Therapy (CBGT) or Sertraline for Obsessive-Compulsive Disorder Who Completed the Study

	CBGT Group (N = 25)			Sertraline Group (N = 25)			CBGT Versus Sertraline
	Before Treatment	After Treatment	p[a]	Before Treatment	After Treatment	p[a]	p[b]
Global YBOCS score	25.08	14.28	< .001	26.12	18.76	< .001	.083
Obsessions	12.16	7.52	< .001	12.60	9.32	< .001	.247
Compulsions	12.92	6.76	< .001	13.52	9.44	< .001	.030
CGI-S score	4.68	3.12	< .001	4.56	3.68	< .001	.152
BAI score	21.80	12.76	< .001	23.28	14.80	< .001	.449
BDI score	23.12	11.96	< .001	21.08	11.60	< .001	.673
WHOQOL-bref score							
Physical	47.71	58.14	< .001	46.28	60.28	< .001	.936
Psychological	39.33	48.83	< .001	44.00	55.33	< .001	.203
Social	45.66	52.33	< .001	48.00	59.66	< .001	.395
Environmental	48.25	53.87	< .001	53.75	57.50	< .001	.257

[a]Analysis of variance for repeated measures: differences between mean scores before and after treatment.
[b]Differences between the 2 groups.
Abbreviations: BAI = Beck Anxiety Inventory, BDI = Beck Depression Inventory, CGI-S = Clinical Global Impressions-Severity of Illness scale, WHOQOL-bref = World Health Organization Quality of Life Assessment-abbreviated version, YBOCS = Yale-Brown Obsessive Compulsive Scale.

compulsions was observed ($F = 4.8$, $df = 1$, $p = .030$), but the same did not occur in relation to obsessions ($F = 1.3$, $df = 1$, $p = .247$). The rate of patients who met the criterion for improvement (reduction of ≥ 35% in the YBOCS scores) was 68.0% with CBGT and 40.0% with sertraline (χ^2 Yates test = 2.899, $p = .088$). Therefore, such a result demonstrates only a trend of higher improvement rates for CBGT. When considering the percentage of symptom reduction by the YBOCS, a significant superiority of CBGT over sertraline was observed; the reduction of symptoms for CBGT patients was 44.07% while in the sertraline group it was 27.78% ($t = 2.2$, $df = 48$, $p = .033$). No difference was seen between treatments in the final values of the CGI-S ($F = 2.1$, $df = 1$, $p = .152$) (Table 1).

Previous Use of Antidepressant and Current Response to CBGT and Sertraline

No significant differences were observed at study endpoint in the YBOCS scores of patients who used serotonergic antidepressants before the trial compared with those who did not in the CBGT ($t = 0.887$, $df = 23$, $p = .384$) or sertraline ($t = –0.218$, $df = 23$, $p = .829$) groups.

Symptom Remission

Regarding the criterion for OCD symptom complete remission (YBOCS score ≤ 8), a significant difference was observed. Eight patients (32%) who underwent CBGT reached this improvement level, while only 1 (4%) among those taking sertraline had the same result (Fisher exact test, $p = .023$).

Change in Other Outcome Measures

A significant reduction in the intensity of anxiety and depression symptoms measured by BAI and BDI, respectively, was observed. There was also improvement on the quality of life in the 4 domains of the WHOQOL-bref, both for patients treated with CBGT and for those taking sertraline. Nevertheless, there were no significant differences between the 2 forms of treatment (Table 1).

DISCUSSION

We compared the efficacy of CBGT to that of sertraline in OCD symptom reduction through a randomized clinical trial. Both CBGT and sertraline were effective in reducing total scores in the YBOCS and CGI and in improving the quality of life of patients in a 12-week period. Nevertheless, CBGT presented a higher reduction in the intensity of compulsions, as well as in the percentage of decrease in obsessive-compulsive symptoms, and a higher rate of full remission of symptoms than those resulting from sertraline use.

At the end of treatment, 40% of patients who received sertraline showed improvements, a lower rate than the 51% to 60% observed in previous pharmacologic treatments.[27] Regarding CBGT, the result of 68% improvement was similar to that found in a previous study of 69.6%.[13] As to symptom reduction percentage, results obtained were similar to those seen in previous studies with CBGT and sertraline.[13,15]

The superiority of CBGT over sertraline was considered in relation to compulsion improvement, an observation previously reported by other authors.[6,7,28] Exposure and response prevention therapy uses response prevention as a crucial treatment strategy, so that patients are directly stimulated to avoid their compulsions. The group environment, on the other hand, probably increases the motivation through mutual support when facing the avoided situations and the increase of anxiety levels inherent to ERP.

The patients treated with CBGT obtained a significantly higher rate of full remission of symptoms as compared to those taking sertraline. A previous pharmacologic study, which used similar criteria, reported a complete remission rate in 18% of patients with OCD who took fluvoxamine.[29] The latter finding is a relevant one, as a complete symptom remission seems to be related to a lower probability of relapse into OCD[30] and other psychiatric disorders.[31,32] According to some authors, there is a tendency to consider complete symptom remission as a goal while treating obsessive-compulsive symptoms and not the mere reduction of symptom percentage, although most clinical trials do not follow this trend.[33]

The anxiety and depression symptoms evaluated by the BAI and the BDI scales, respectively, were reduced in both treatment groups, without significant difference between the groups. These data are in agreement with the study of Van Balkom et al.[10] regarding the BDI score as well as the study of Cordioli et al.,[13] which demonstrated reduction in anxiety symptoms in patients with OCD who underwent CBGT as compared to patients in the control group. Considering the CGI-S, the present study did not find any difference between the 2 groups, unlike the study of Foa et al.,[8] which demonstrated superiority of ERP as compared to clomipramine using this rating scale.

Comparison With Similar Clinical Trials

The results of the present study are consistent with previous findings by Marks et al.,[6,7] Foa et al.,[8] and Nakatani et al.,[11] who observed the superiority of ERP over antiobsessive drugs in OCD treatment. But Cottraux et al.[9] and Van Balkom et al.[10] did not find any differences between the 2 treatments. On the other hand, the Pediatric OCD Treatment Study[34] demonstrated better results of CBT compared to those of sertraline in the treatment of children and adolescents with OCD. It is possible that methodological differences can explain this difference between the studies, such as dose of drug, length of usage, and frequency of ERP sessions. Our study showed superiority for CBGT even though this therapy was not applied intensively, as ERP was when Marks et al.[6] and Foa et al.[8] performed their studies.

We assessed both forms of treatment separately and during a consistent period (12 weeks). It is possible that the length of treatment with clomipramine (7 weeks) in 1 study[6] and with fluvoxamine (9 weeks) in another,[10] before association with ERP, might have been insufficient to observe the effect of antiobsessive drugs in a complete form.

Another interesting aspect of our study was the degree of compliance with treatment, with only 3 dropouts in each group (10.7%). The average rate of dropout in OCD clinical trials is 24% with sertraline and 17% with ERP.[35] A possible explanation for this higher degree of compliance may be the fact that the patients' motivation for taking any of the 2 types of treatment was taken into consideration when assessing patients prior to the trial.

This study also compared the change in quality of life with 2 distinctive types of treatment. As in previous studies,[13,36] improvement was observed both with CBGT and sertraline. The present analysis has the advantage of quantifying the impact of response to treatment in a broader form, as it was already suggested by some authors,[8] although this practice is still scarce.[37]

Repeating results by Foa et al.,[8] CBGT enabled the mean reduction of symptoms to reach a YBOCS score < 16. This is a relevant result since sertraline patients at the end of the study still presented a mean score of 19, a severity of symptoms compatible with the inclusion criterion of this study. Usually, OCD pharmacologic clinical trials do not enable a mean symptom reduction to subclinical levels.[15,27]

Cognitive-behavioral group therapy sessions were held weekly, lasting for 2 hours, and this treatment showed better results than sertraline after several analyses. Group therapy makes it possible to treat a larger number of patients at a lower cost and with similar efficacy to that of individual care.[13] Also, there is evidence that the relapse rate is lower after ERP.[38] Pharmacologic treatment, however, is still more widely available and, in some cases, the only possible therapy.

Study Limitations

The main limitation of this study is the small sample size that could lead to type II error. In a study including a larger sample, the findings showing only a trend of better results of CBGT in comparison with sertraline would probably be significant.

Fixed doses of sertraline (100 mg/day) were used for all subjects because previous studies[15,39] showed that there was no statistically significant difference in patients' responses between the use of 50, 100, and 200 mg/day. However, it is possible that, with a higher dose, some patients may have a different outcome.[40]

The inclusion of patients who had undergone previous treatment with a SRI could be a limitation of this study, as a lack of response to prior adequate trials of an appropriate SSRI would lead one to predict less likelihood of response to another trial.[41] On the other hand, the statistical analysis did not find any difference in the final YBOCS scores between patients who underwent previous serotonergic antidepressant treatment from those who did not in either the CBGT or sertraline groups. Regarding the previous use of sertraline, only 4 patients had used this medication before this trial. Two of the 4 patients did not respond, but they used less than 100 mg/day of sertraline.

Unlike most studies, we did not have a third group of treatment, which would associate sertraline with therapy.

We also did not have a placebo control group and, therefore, it was not possible to compare the efficacy of each treatment to the association of both. To the best of our knowledge, there is no evidence of superior effectiveness in the associated use of SRIs and ERP as opposed to ERP alone in adults,[7,8,10] and it is unknown whether the associated use of sertraline and CBGT would provide different results. On the other hand, a study involving children[34] showed a significant superiority of the use of CBT with sertraline if compared to the use of only 1 type of treatment. Another limitation of the current study is that the OCD sample was free of comorbid diagnoses and, therefore, our findings might not be generalizable to an OCD sample with comorbidity.

In summary, the results of this trial suggest that sertraline and CBGT are effective in reducing OCD symptoms and in improving the quality of life. Nevertheless, a significant superiority of CBGT over sertraline was observed in reducing the intensity of compulsions, in the rate of symptom reduction, and in complete remission.

Drug names: clomipramine (Anafranil and others), sertraline (Zoloft), venlafaxine (Effexor).

REFERENCES

1. Karno M, Golding JM, Sorenson SB, et al. The epidemiology of obsessive-compulsive disorder in five US communities. Arch Gen Psychiatry 1988;45:1094–1099
2. Rasmussen SA, Eisen JL. The epidemiology and clinical features of obsessive compulsive disorder. Psychiatr Clin North Am 1992;15: 743–758
3. March JS, Frances A, Carpenter D, et al. Expert Consensus Guideline Series: Treatment of Obsessive-Compulsive Disorder. J Clin Psychiatry 1997;58(suppl 4):13–72
4. Leckman JF, Grice DE, Boardman J, et al. Symptoms of obsessive-compulsive disorder. Am J Psychiatry 1997;154:911–917
5. Mataix-Cols D, Rosario-Campos MC, Leckman JF. A multidimensional model of obsessive-compulsive disorder. Am J Psychiatry 2005;162: 228–238
6. Marks IM, Stern RS, Mawson D, et al. Clomipramine and exposure for obsessive-compulsive rituals: 1. Br J Psychiatry 1980;136:1–25
7. Marks IM, Lelliott PT, Basoglu M, et al. Clomipramine, self-exposure and therapist-aided exposure for obsessive-compulsive rituals. Br J Psychiatry 1988;152:522–534
8. Foa EB, Liebowitz MR, Kozak MJ, et al. Randomized, placebo-controlled trial of exposure and ritual prevention, clomipramine, and their combination in the treatment of obsessive-compulsive disorder. Am J Psychiatry 2005;162:151–161
9. Cottraux J, Mollard E, Bouvard, M, et al. A controlled study of fluvoxamine and exposure in obsessive-compulsive disorder. Int Clin Psychopharmacol 1990;5:17–30
10. Van Balkom AJ, de Haan E, van Oppen P, et al. Cognitive and behavioral therapies alone versus in combination with fluvoxamine in the treatment of obsessive-compulsive disorder. J Nerv Ment Dis 1998; 186:492–499
11. Nakatani E, Nakagawa A, Nakao T, et al. A randomized controlled trial of Japanese patients with obsessive-compulsive disorder: effectiveness of behavior therapy and fluvoxamine. Psychother Psychosom 2005;74: 269–276
12. Fals-Stewart W, Marks AP, Schafer BA. A comparison of behavioral group therapy and individual behavior therapy in treating obsessive-compulsive disorder. J Nerv Ment Dis 1993;181:189–193
13. Cordioli AV, Heldt E, Bochi DB, et al. Cognitive-behavioral group therapy in obsessive-compulsive disorder: a randomized clinical trial. Psychother Psychosom 2003;72:211–216
14. Chouinard G, Goodman W, Greist JH, et al. Results of a double-blind placebo-controlled trial of a new serotonin uptake inhibitor, sertraline, in the treatment of obsessive-compulsive disorder. Psychopharmacol Bull 1990;26:279–284
15. Greist JH, Chouinard G, DuBoff E, et al. Double-blind parallel comparison of three dosages of sertraline and placebo in outpatients with obsessive-compulsive disorder. Arch Gen Psychiatry 1995;52:289–295
16. Sheehan DV, Lecrubier Y, Sheehan KH, et al. The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. J Clin Psychiatry 1998;59(suppl 20):22–33
17. Amorim P. Mini-International Neuropsychiatric Interview (MINI): validation of a short structured diagnostic psychiatric interview. Revista Brasileira de Psiquiatria 2000;22:106–115
18. Goodman WK, Price LH, Rasmussen AS, et al. The Yale-Brown Obsessive-Compulsive Scale: development, use, and reliability. Arch Gen Psychiatry 1989;46:1006–1016
19. Beck AT, Ward CH, Mendelson M, et al. An inventory for measuring depression. Arch Gen Psychiatry 1961;4:561–571
20. Guy W. ECDEU Assessment Manual for Psychopharmacology. US Dept Health, Education, and Welfare publication (ADM) 76–338. Washington, DC: National Institute of Mental Health; 1976:218–222
21. Fontenelle LF, Mendlowicz MV, Soares ID, et al. Patients with obsessive-compulsive disorder and hoarding symptoms: a distinctive clinical subtype? Compr Psychiatry 2004;45:375–383
22. Asbahr FR, Ramos RT, Costa AN, et al. Obsessive-compulsive symptoms in adults with history of rheumatic fever, Sydenham's chorea and type I diabetes mellitus: preliminary results. Acta Psychiatr Scand 2005;111:159–161
23. Kipper L, Blaya C, Teruchkin B, et al. Brazilian patients with panic disorder: the use of defense mechanisms and their association with severity. J Nerv Ment Dis 2004;192:58–64
24. Beck AT, Epstein N, Brown G, et al. An inventory for measuring clinical anxiety: psychometric properties. J Consult Clin Psychol 1988;56:893–897
25. Cunha JA. Manual da versão em português das escalas de Beck. São Paulo (SP), Casa do psicólogo 2001;1:171
26. Fleck MP, Louzada S, Xavier M, et al. Application of the Portuguese version of the abbreviated instrument of quality life WHOQOL-bref. Rev Saude Publica 2000;34:178–183
27. The Clomipramine Collaborative Study Group. Clomipramine in the treatment of obsessive-compulsive disorder. Arch Gen Psychiatry 1991;48:730–738
28. Abel JL. Exposure with response prevention and serotonergic antidepressants in the treatment of obsessive-compulsive disorder: a review and implications for interdisciplinary treatment. Behav Res Ther 1993;31: 463–478
29. Hollander E, Koran LM, Goodman WK, et al. A double-blind, placebo-controlled study of the efficacy and safety of controlled-release fluvoxamine in patients with obsessive-compulsive disorder. J Clin Psychiatry 2003;64:640–647
30. Braga DT, Cordioli AV, Niederauer K, et al. Cognitive-behavioral group therapy for obsessive-compulsive disorder: a 1-year follow-up. Acta Psychiatr Scand 2005;112:180–186
31. Thase ME. Achieving remission and managing relapse in depression. J Clin Psychiatry 2003;64(suppl 18):3–7
32. Sheehan DV, Mao CG. Paroxetine treatment of generalized anxiety disorder. Psychopharmacol Bull 2003;37(suppl 1):64–75
33. Hollander E, Zohar J. Beyond refractory obsessions and anxiety states: toward remission. J Clin Psychiatry 2004;65(suppl 14):3–5
34. Pediatric OCD Treatment Study (POTS) Team. Cognitive-behavior therapy, sertraline, and their combination for children and adolescents with obsessive-compulsive disorder: the Pediatric OCD Treatment Study (POTS) randomized controlled trial. JAMA 2004;292:1969–1976
35. Kobak KA, Greist JH, Jefferson JW, et al. Behavioral versus pharmacological treatments of obsessive-compulsive disorder: a meta-analysis. Psychopharmacol (Berl) 1998;136:205–216
36. Koran LM, Hackett E, Rubin A, et al. Efficacy of sertraline in the long-term treatment of obsessive-compulsive disorder. Am J Psychiatry 2002;159:88–95
37. Tenney NH, Denys DA, van Megen HJ, et al. Effect of a pharmacological intervention on quality of life in patients with

obsessive-compulsive disorder. Int Clin Psychopharmacol 2003;18:29–33
38. O'Sullivan G, Noshirvani H, Marks I, et al. Six-year follow-up after exposure and clomipramine therapy for obsessive-compulsive disorder. J Clin Psychiatry 1991;52:150–155
39. Greist JH, Jefferson JW, Kobak KA, et al. A 1 year double-blind placebo-controlled fixed dose study of sertraline in the treatment of obsessive-compulsive disorder. Int Clin Psychopharmacol 1995;10:57–65
40. Ninan PT, Koran LM, Kiev A, et al. High-dose sertraline strategy for nonresponders to acute treatment for obsessive-compulsive disorder: a multicenter double-blind trial. J Clin Psychiatry 2006;67:15–22
41. Rasmussen SA, Eisen JL. Treatment strategies for chronic and refractory obsessive-compulsive disorder. J Clin Psychiatry 1997;58(suppl 13):9–13