Cognitive-Behaviour Therapy and Medication in the Treatment of Obsessive–Compulsive Disorder: A Controlled Study

K O'Connor, PhD1, C Todorov, MD2, S Robillard, MPs3, F Borgeat, MD4, M Brault, MA3

Objective: To evaluate the effect of combining cognitive-behaviour therapy (CBT) and medication in the treatment of obsessive-compulsive disorder (OCD).

Method: Twenty-nine subjects diagnosed with OCD according to Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) criteria were recruited through the Anxiety Clinic of Louis-H Lafontaine Hospital. They were evaluated at baseline and after treatment on the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) by a psychiatrist who was blind to treatment modality. Subjects rated their degree of resistance to their rituals and the strength of their obsessional beliefs. Subjects then received 1 of 4 treatments: medication and CBT simultaneously (n = 9), CBT only (n = 6), medication while on a wait-list for CBT (n = 6), or no treatment while on a wait-list for CBT (n = 5).

Results: Multivariate analysis revealed that Y-BOCS scores and clinical ratings significantly improved posttreatment in all groups except the nontreatment wait-list control group. Subjects in the 2 active treatment groups receiving CBT showed reduced strength in their obsessional beliefs. The subsequent administration of CBT to those groups on the wait-list also decreased the strength of their primary obsessional beliefs and beliefs about the consequences of not performing the rituals.

Conclusions: Our results suggest that either CBT or medication alone is more effective than no treatment. The combination of CBT and medication seems to potentiate treatment efficacy, and we found it more clinically beneficial to introduce CBT after a period of medication rather than to start both therapies simultaneously.

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Key Words: obsessive–compulsive disorder, cognitive-behaviour therapy, medication

Obsessive–compulsive disorder (OCD) is a debilitating disorder affecting an estimated 2% to 3% of the population, and this prevalence is likely underestimated (1). More recent estimates in the general population place lifetime prevalence at 3% to 4% (2). Common manifestations of OCD include the following: repeatedly washing hands or other parts of the body to cleanse imagined contamination; rechecking actions, such as locking the door or turning off a machine, in response to obsessional doubt; and repeated touching or looking, for reassurance that an object is correctly placed or a person is present. Usually compulsions or rituals are an attempt to “neutralize” aversive, intrusive obsessional thought, at least in the short-term. In severe cases, an obsessive doubt may lead the person to engage in a ritual (such as checking or cleaning) repeatedly, for hours, and so the disorder can be socially, occupationally, and physically debilitating. Medical complications may follow chronic washing or scratching habits, and secondary social isolation and impaired social functioning and quality of life may spring from both OCD symptoms or secondary avoidance of the situations that provoke them (3).
The consensus is that both drug treatment with potent serotonergic antidepressants and behavioural psychotherapy are more beneficial as active treatments than is placebo. However, a recent metaanalysis of treatment effect size, in which efficacy of OCD treatment was measured on self-rating instruments, favoured behaviour therapy in OCD over medication (4).

**Pharmacological Treatment**

Since the early 1980s, numerous double-blind, controlled studies consistently established the efficacy of the potent serotonergic antidepressants (clomipramine, fluoxetine, fluvoxamine, paroxetine, and sertraline) in the treatment of OCD over that of placebo, nonserotonergic antidepressants, or other compounds (5). All of these are considered to have similar efficacy, but selective serotonin reuptake inhibitors (SSRIs) differ from clomipramine in their side effect profile. This appears to give SSRIs some overall advantages over clomipramine, making them a first-choice antiobsessional medication; however, this recent assumption is still contested (6). When placebo response rates in OCD are typically low (below 10%), appropriate antiobsessional trials show a clinically meaningful improvement of about 30% to 50% reduction of symptoms in 60% to 80% of OCD patients (7). Most of the pharmacological response appears during the first 2–4 months of treatment, but recent studies suggest slight continuing improvement occurring for up to 2 years of medication (8). Further improvement or better responses can be achieved by different pharmacological augmentation strategies (9). However, abrupt discontinuation of treatment leads to a rapid resurgence of OCD symptoms in 80% of successful responders, even after more than 2 years of being on medication. Nevertheless, a gradual decrease of 30% to 50% of the effective treatment dosage is still effective as a long-term maintenance pharmacotherapy (10–12).

**Psychological Therapy**

The most effective psychological treatment to date is exposure with response prevention. In practice, it involves exposing the person to a situation that provokes the ritual and, at the same time, preventing the person from performing the ritual. The success of these behavioural treatments in significantly reducing the symptoms as reported in the literature is 20% to 60% (13,14). Relapse is reported in about 30% of cases (15). Success depends, in part, on the clinical severity of the problem and whether the OCD person has a comorbid mood disorder and/or personality disorder (15).

It is important to distinguish between primary obsessional beliefs and secondary beliefs following from the core obsessional belief. The primary belief might be “Now I’ve shaken hands, so my fingers are contaminated,” and the aversive automatic thoughts consequent on these first thoughts would be “Now I must wash my hands or they will contaminate someone else or I will be extremely uncomfortable.” It seems that, though exposure may well reduce the impact of secondary thoughts, it may not affect primary beliefs (16), particularly if the primary beliefs involve overvalued ideas (17). However, a more focused cognitive therapy may dislodge primary beliefs (18,19).

Van Oppen and Arntz have recently described a program applying cognitive-behaviour therapy (CBT) to OCD (20). According to these authors, 2 main evaluative processes are to be addressed in therapy: the perception of probability of danger and the appraisal of personal responsibility. They suggest addressing the overestimation of catastrophe by rationalizing probabilities or by using behavioural experiments that test the actual outcome of the feared action. They further suggest cognitive techniques to reduce the clients’ overestimation of their responsibility and subsequent consequences, such as drawing a pie chart to graphically allocate responsibility on an empirical basis depending on the involvement of others or asking clients to apply the “double standard” technique, wherein persons are asked if they would allocate to other people the same blame that they anticipate would be allocated to themselves. A final behavioural experiment is to test the negative consequences anticipated by the person for not taking responsibility for an event.

The Laval group (21,22) has recently extended the work of van Oppen and Arntz (20). In addition to the overestimation of catastrophic consequences and exaggerated responsibility, the Laval group suggests that CBT should target 3 other major faulty appraisals: overestimating the importance of thoughts by, for example, believing thoughts are as practically important as actions (thought–action fusion) (23); believing that their obsessive and anxious thoughts are unacceptable; and needing to believe they can have complete control over thoughts and actions.

Although CBT approaches have shown considerable promise in single case studies, particularly in cases otherwise resistant to therapy, cognitive therapy has not been evaluated in a systematic fashion either in large-scale outcome studies or in comparison with conventional behaviour therapy or medication. A problem in evaluating the efficacy of cognitive therapy is that change in beliefs can occur in the absence of cognitive intervention as a consequence of other mood or behavioural modification. Both behaviour
therapy and pharmacotherapy can lead to modified cognitions. In OCD, secondary thoughts about what is likely to happen if the ritual is not performed can be dislodged by exposure, and the severity of such secondary thoughts is not a contraindication to behavioural treatment (24).

In summary, the clinical literature suggests that both CBT and medication can be effective treatments for OCD and that both can affect beliefs and mood. However, we do not know if both types of treatment change behaviour and beliefs in equal measure. Further, in clinical practice, CBT and medication are often prescribed in combination, yet we have no knowledge of how drugs and therapy interact in the treatment of OCD or whether they complement or antagonize each others’ clinical efficacy.

**Design**

This study compared the specific effects of CBT on OCD symptomatology and on primary and secondary beliefs, when CBT is administered either in conjunction with or independently of medication. The design was between-groups repeated-measures design, with 4 groups and 2 measurement periods: before and after the treatment or wait-list period. The experimental group received a combination of CBT and medication. Comparison groups received CBT without medication, medication while on a wait-list for CBT, and no treatment while on a wait-list for CBT.

**Criteria of Inclusion–Exclusion**

The criterion for inclusion in the study was the presence of a severely disabling and chronic OCD. The exclusion criterion was the presence of only obsessive ruminations without observable rituals or of any other major pathology as identified on Axis I or II of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R) in need of treatment. Subjects receiving medication were asked to keep the dosage constant for the duration of the wait-list and/or CBT. All clients receiving CBT and medication were stabilized on medication for a minimum period of 1–2 months prior to study entry. The stabilization period ranged 1–11 months (mean 3.86 months; SD 3.48). The criterion for stabilization was that the person received an individually tailored dosage of some potent serotonin reuptake inhibitor and had reached a ceiling level of improvement or no change in symptoms as measured by the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) (25,26) prior to study entry and that this dosage was kept constant throughout the study.

**Recruitment**

Subjects were recruited from referrals to the hospital anxiety clinic where the initial diagnosis was made by an experienced psychiatrist according to DSM-III-R criteria. A second diagnosis was made by another experienced psychiatrist who also administered the Anxiety Disorders Interview Schedule (ADIS-III-R) (27) and the Y-BOCS. There was 100% interdiagnostic agreement between psychiatrists for all subjects accepted into the study. The second evaluator, blind to the allocation of treatment, evaluated the subjects on the Y-BOCS before, during, and after treatment or before, during, and after the wait-list period for those in the control group. After the second psychiatric evaluation, the subjects were seen by a clinical psychologist, who evaluated the type of compulsions, the strength of primary and secondary obsessional conviction, and the subjects’ degrees of efficacy in resisting the rituals. Subjects considered suitable for the study and motivated to participate were asked to read and sign the consent form, which described the project and specified that the subject could retire from the study at any time. Subjects were informed that there was a possibility of being placed in a wait-list control group and that should this happen they would receive CBT after a 20-week waiting period. Subjects on the wait-list were seen midway through the wait-list period and evaluated clinically on the Y-BOCS.

Most patients were randomly allocated to 1 of the 4 subgroups. However, since several suitable patients, stabilized on medication, were already at the Anxiety Clinic, more subjects were recruited to the medication than the nonmedication groups. In addition, 3 clients had definite preferences (at least initially) as to whether they preferred medication or nonmedication. This choice was respected, so allocation to groups was not entirely random. However, clinical and demographic characteristics between groups were compared at baseline, and no differences were found (Table 1).

**Table 1. Clinical and demographic data**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean age in years (SD)</th>
<th>Sex (N)</th>
<th>Mean duration of OCD in years (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Medication only (n = 5)</td>
<td>36.2 (1.8)</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13.8 (4.8)</td>
</tr>
<tr>
<td>No treatment (n = 6)</td>
<td>41.5 (16.0)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20.4 (19.6)</td>
</tr>
</tbody>
</table>
Twenty-nine subjects were recruited to the study. During the study, 3 dropped out for different reasons, and each drop-out was from a different group. Twenty-six completed the first treatment (and/or wait-list) period, broken down by group: CBT and medication (n = 9), CBT only (n = 6), medication only (n = 5), and no treatment (n = 6). In total, 24 subjects completed the first period and subsequently completed treatment after the wait-list period, broken down by group as follows: CBT and medication (n = 9), CBT only (n = 6), medication while on CBT wait-list (n = 4), and no treatment while on CBT wait-list (n = 5).

**Questionnaires**

Subjects completed the following series of self-report questionnaires at baseline and posttreatment: the Maudsley Obsessive Compulsive Inventory (MOCI) (28), the Beck Depressive Inventory (BDI) (29), 2 perfectionism scales (the Frost and others [30] Multidimensional Inventory and the Hewitt and others [31] Perfectionism Scale), and the Spielberger State-Trait Anxiety Inventory (STAI) (32).

**Clinical Scales**

The Y-BOCS was administered at baseline, during the treatment and wait-list period, and after the treatment and wait-list periods. All Y-BOCS scales were administered, and the total score was calculated as the total of items 1–10. The National Institute of Mental Health Obsessive–Compulsive Scale (NIMHOCS) is the clinician’s overall assessment of severity of OCD symptoms (1-minimal to 15-severe). Using the Clinical Global Impression (CGI) scale, the clinician rated the patient’s illness (1 = normal, not at all ill, to 7 = extremely ill). A CGI improvement scale asked the clinician to rate the patient’s improvement (1 = very much improved to 7 = very much worse) since the last visit (Table 2).

**Table 2. Yale-Brown Obsessive–Compulsive Scale (Y-BOCS) and National Institute of Mental Health Obsessive–Compulsive Scale (NIMHOCS)**

<table>
<thead>
<tr>
<th>Group</th>
<th>Y-BOCS (SD)</th>
<th>NIMHOCS (SD)</th>
<th>Y-BOCS (SD)</th>
<th>NIMHOCS (SD)</th>
<th>Y-BOCS (SD)</th>
<th>NIMHOCS (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication wait-list group (n = 5)*</td>
<td>21.0 (2.9)</td>
<td>7.8 (1.6)</td>
<td>12.0 (4.5)</td>
<td>5.8 (1.1)</td>
<td>9.5 (5.7)</td>
<td>4.5 (1.7)</td>
</tr>
<tr>
<td>Non-treatment wait-list group (n = 6)*</td>
<td>19.3 (4.5)</td>
<td>6.3 (0.8)</td>
<td>17.5 (4.0)</td>
<td>7.2 (0.8)</td>
<td>14.6 (8.2)</td>
<td>6.4 (3.3)</td>
</tr>
<tr>
<td>CBT (n = 6)</td>
<td>23.5 (4.0)</td>
<td>8.8 (1.3)</td>
<td>13.3 (8.6)</td>
<td>3.0 (3.0)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>CBT with medication (n = 9)</td>
<td>23.8 (5.4)</td>
<td>8.9 (1.9)</td>
<td>17.8 (4.7)</td>
<td>8.0 (1.9)</td>
<td>—</td>
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</tr>
</tbody>
</table>

*For the scores measured after treatment for the wait-list groups, n = 4.

§For the scores measured after treatment for the wait-list groups, n = 5.

All participants were seen midway during treatment or wait-list period by the clinician administering the Y-BOCS to monitor current clinical status and determine if the patient required further treatment or referral to another agency. Although data were collected at this midpoint period, only the baseline and posttreatment (or post-wait-list) periods were considered in the study. The same clinician carried out all ratings posttreatment and was blind to treatment-group membership.

**Table 3. Measures of strength of efficacy, primary belief, and secondary belief**

<table>
<thead>
<tr>
<th>Group</th>
<th>Efficacy (SD)</th>
<th>Primary belief (SD)</th>
<th>Secondary belief (SD)</th>
<th>Efficacy (SD)</th>
<th>Primary belief (SD)</th>
<th>Secondary belief (SD)</th>
<th>Efficacy (SD)</th>
<th>Primary belief (SD)</th>
<th>Secondary belief (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication only (n = 5)*</td>
<td>28.4 (24.8)</td>
<td>3.5 (3.1)</td>
<td>4.8 (1.8)</td>
<td>67.1 (26.0)</td>
<td>2.7 (3.5)</td>
<td>3.3 (2.5)</td>
<td>85.4 (10.5)</td>
<td>0.9 (1.1)</td>
<td>1.6 (1.2)</td>
</tr>
<tr>
<td>No treatment (n = 6)*</td>
<td>27.1 (21.3)</td>
<td>2.8 (1.9)</td>
<td>5.2 (2.1)</td>
<td>36.2 (30.1)</td>
<td>2.5 (1.3)</td>
<td>4.3 (2.0)</td>
<td>53.0 (28.2)</td>
<td>2.2 (1.3)</td>
<td>2.8 (1.4)</td>
</tr>
<tr>
<td>CBT only (n = 6)</td>
<td>23.0 (16.9)</td>
<td>6.0 (1.7)</td>
<td>4.5 (2.3)</td>
<td>59.3 (24.6)</td>
<td>2.8 (2.1)</td>
<td>2.0 (2.2)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>CBT with medication (n = 9)</td>
<td>20.9 (16.6)</td>
<td>3.7 (3.2)</td>
<td>5.7 (1.7)</td>
<td>60.0 (18.0)</td>
<td>2.0 (2.3)</td>
<td>2.2 (1.7)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
On the efficacy scale (0–100), we measured how confident the person felt to resist performing the ritual. Self-efficacy is a concept developed by Bandura to measure how confident a person feels about performing or controlling an action (33). Efficacy is generally measured on a scale of 0% to 100% in accordance with the format suggested by Condiotte and Lichtenstein (34). Other clinical scales measured the strength of the subject’s obsessional belief. The core or primary belief scale (0–8) measured the strength of subject’s belief that the original obsessional conviction was correct when others did not share it. The secondary belief scale (0–8) measured how strongly the person felt that something other than anxiety would occur if he or she did not perform the ritual. These measures of strength and the distinction between primary and secondary OCD-related beliefs are adapted from scales initially developed in Isaac Marks’s laboratory and subsequently used in other studies (16,24), where they have been validated as clinical measures of change in OCD-related beliefs. The primary and secondary beliefs were recorded for each of the subjects’ rituals. A ritual was listed separately in the efficacy hierarchy, if it occurred at a time or place distinct from other rituals. For example, checking light switches at different times of day was listed as 1 ritual. If a person checked lights at one time and checked that clothes were properly folded at a different time, these were considered distinct rituals. Conversely, if a person checked different appliances before going to bed, all the checking was considered part of the same ritual, because all checking occurred at the same time and in the same place.

**CBT Therapy Sessions**

A psychological evaluation was conducted over at least 3 sessions to establish, in order of priority, a hierarchy of subjects’ obsessional beliefs and their compulsions. This hierarchy enabled graded exposure to proceed from the least troubling rituals to the more difficult rituals. These evaluations required several sessions, since the hierarchy of rituals was not always easy to establish in the first interview, and the subject would, after reflection, report other rituals in subsequent weeks. It can be a lengthy process to uncover all ritual-related behaviours in OCD, as has been attested to by other clinical workers (22). Subjects’ expectations about therapy were elicited during the evaluation stage. Initial expectations varied between indifference (feeling there was nothing to lose) and enthusiasm (feeling optimistic about a quick cure). The rationale and model of the treatment were presented and the person’s active role and cooperation emphasized. The duration and progression of the treatment were explained and the goals of therapy established, along with current knowledge about success and failure rates and about the factors that limit success.

Throughout treatment, the role of obsessional beliefs and their strength were targeted as key factors in therapy. The cognitive strategies differed from client to client but included Socratic dialogue, attempts to experientially change unrealistic inferences about reality to more realistic, use of imagery, reality testing, self-statement, and cognitive restructuring of emotional reactions. Each compulsion was addressed in a hierarchical progression. Core beliefs were addressed before exposure, and the person practised thought exercises with the therapist and as homework. Subsequently, exposure and response prevention was planned together with the client in a graded fashion for each cue situation in the hierarchy. The sessions, including evaluation sessions, lasted 60 minutes and were conducted weekly for 5 months with a monthly follow-up for 6 months if needed and/or requested. The posttreatment evaluations were taken at 20 weeks. If it was felt that the client could benefit from more treatment after this date, sessions were continued informally on a monthly basis after the posttreatment evaluations.

**Results**

Both clinical and questionnaire measures were analyzed pre- and posttreatment using multivariate analysis of variance within a repeated-measures design. In order to look for the specific effect of CBT on OCD symptoms in medication and nonmedication groups, we first examined differences in outcome over all 4 groups (after the first treatment or wait-list period) and then analyzed outcome over the wait-list and subsequent treatment periods in the 2 groups that served as the wait-list control groups. We also examined the intercorrelations between clinical measures and between questionnaire scores. The mean strength of efficacy and of beliefs were calculated over the hierarchy of compulsive ritual to yield a single score.

**Clinical Findings**

The 2 groups receiving psychological treatment (CBT only, CBT and medication) and the medication only wait-list control group showed clinical improvement between the baseline period and the end of the first treatment (or wait-list) period.
The Y-BOCS total score, NIMHOCS, and the efficacy scale were highly correlated and produced a similar pattern of results. In all 3 measures, there were no baseline group effects but a significant treatment effect \( F_{Y-BOCS\text{TOTAL}}[1,22] = 33.65, P < 0.0001 \) \([\text{Power} = 1.00]\); \( F_{\text{NIMHOCS}}[1,22] = 10.66, P < 0.004 \) \([\text{Power} = 0.88]\); \( F_{\text{EFFICACY}}[1,22] = 99.19, P < 0.0001 \) \([\text{Power} = 1.00]\) and a significant group by treatment interaction effect \( F_{\text{TOTAL}}[1,22] = 2.43, P < 0.09 \) \([\text{Power} = 0.53]\); \( F_{\text{NIMHOCS}}[3,22] = 4.29, P < 0.016 \) \([\text{Power} = 0.79]\); \( F_{\text{EFFICACY}}[3,22] = 5.54, P < 0.005 \) \([\text{Power} = 0.89]\).

All 3 groups receiving treatment, but not the nontreatment wait-list control, showed a clinical improvement as measured by the Y-BOCS total score, NIMHOCS, and efficacy score, from baseline to the end of the treatment (or wait-list) evaluation period. The interaction effect referred to a significant difference in outcome within the 2 wait-list groups (no treatment and medication only) \( F_{1,9} = 6.90, P < 0.03 \), with only the medication wait-list group improving in Y-BOCS total scores. While the medication wait-list group improved on the 3 clinical outcome measures, the nontreatment wait-list group showed no change.

Subsequent to receiving CBT, both wait-list groups improved in Y-BOCS total score \( F_{1,7} = 8.09, P < 0.03 \) to the extent that, when both wait-list groups had finished their CBT treatment, no group effects or group by interaction effects, only an overall treatment effect for all groups \( F_{1,20} = 33.27, P < 0.001 \), were present.

Self-report efficacy also improved in the medication only group during the wait-list period \( F_{1,9} = 6.98, P < 0.03 \), while the nontreatment wait-list control group showed no change in efficacy. However, after receiving CBT, both wait-list groups showed improved efficacy \( F_{1,7} = 24.90, P < 0.002 \). Subsequently, when all groups had finished CBT, the groups showed no difference, and there was only a significant main treatment effect \( F_{1,20} = 196.15, P < 0.0001 \).

Strength of primary beliefs in the rationale of obsessional ideas did not differ in intensity between groups at baseline. Primary belief strength showed an overall treatment effect \( F_{1,22} = 14.82, P < 0.001 \) \([\text{Power} = 0.96]\) and a suggestive group by treatment effect \( F_{3,22} = 2.59, P < 0.08 \) \([\text{Power} = 0.56]\). Only the groups receiving CBT significantly reduced the strength of primary beliefs at the end of the first phase. During the wait-list period, neither the medication only nor the nontreatment group showed any change in strength of primary beliefs. But after receiving CBT, strength of primary beliefs decreased further in both wait-list groups \( F_{1,7} = 4.99, P < 0.06 \) \([\text{Power} = 0.96]\). After all groups had received CBT, there were no group differences, only a significant overall treatment effect \( F_{1,20} = 17.54, P < 0.001 \).

Secondary beliefs in the consequences of not performing the rituals showed no differences in strength at baseline. Secondary beliefs showed a treatment effect \( F_{1,22} = 42.62, P < 0.0001 \) \([\text{Power} = 1.00]\) and group by treatment effect \( F_{3,22} = 3.59, P < 0.03 \) \([\text{Power} = 0.71]\). There was a marginally significant tendency toward decreased strength of secondary beliefs in both wait-list groups over the wait-list period \( F_{1,9} = 4.31, P < 0.068 \) with no group interactions. After receiving CBT, the strength of secondary convictions reduced further in the wait-list groups \( F_{1,7} = 21.10, P < 0.003 \) with no group interactions. There were no group interactions after all groups had received CBT, only a significant overall treatment effect \( F_{1,20} = 84.73, P < 0.0001 \).

The Pearson-product moment correlation matrix between clinical measures indicated a negative correlation at baseline between efficacy measures and total score of the Y-BOCS at baseline \( r_{26} = -0.36, P < 0.06 \), at the end of the first treatment period for the 2 groups receiving CBT \( r_{11} = -0.80, P < 0.003 \), and after all groups had received CBT \( r_{24} = -0.66, P < 0.0001 \). The Y-BOCS total and NIMHOCS scores were highly intercorrelated at baseline \( r_{26} = 0.68, P < 0.0001 \), at the end of the first treatment period for the 2 CBT groups \( r_{11} = 0.82, P < 0.002 \), and after all groups had received CBT \( r_{24} = 0.94, P < 0.0001 \). Interestingly, strength of primary and secondary beliefs were noncorrelated except at the postevaluation after all groups had received CBT \( r_{24} = 0.53, P < 0.01 \). Strength of beliefs was also generally noncorrelated with the other clinical measures.

**Questionnaire Results**

The self-report questionnaire results pre- and posttreatment supported the view of clinical improvement posttreatment.

The BDI \( n = 20 \) indicated a significant decrease in depression posttreatment in all groups \( F_{1,19} = 6.09, P < 0.02 \) \([\text{Power} = 0.65]\). There was a group effect \( F_{3,19} = 5.73, P < 0.006 \) \([\text{Power} = 0.89]\) indicating that the medication with CBT group had a significantly lower BDI score than the wait-list control groups, both pre- and posttreatment. In addition, the 2 wait-list control groups showed a group effect on the BDI \( F_{1,7} = 11.70, P < 0.01 \) \([\text{Power} = 0.83]\), indicating that only the wait-list group taking medication improved on the depression score during the wait-list period. The STAI showed a decrease in trait anxiety posttreatment \( F_{1,18} = 7.06, P < 0.02 \) \([\text{Power} = 0.71]\). State anxiety showed a suggestive decrease over time \( F_{1,19} = 3.53,
There was no change in state or trait anxiety for the wait-list groups at the end of the first period. There were no significant changes in either of the 2 measures of perfectionism or in any of their subscales (30,31) at posttreatment. The mean scores of the MOCl were reduced, but not significantly, in all groups posttreatment (although individual subjects showed clinically significant reductions).

**Discussion**

The principal clinical finding of the study was that CBT alone, CBT with medication, and CBT following medication gave statistically equivalent benefits. The lack of change in the nontreatment wait-list control group on any clinical measures clearly indicates that treatment of either CBT or medication is more effective than no treatment for OCD.

Medication alone can bring about considerable clinical improvement as shown in the medication only group, whose Y-BOCS and self-efficacy scores equalled both the CBT and CBT with medication groups after the wait-list period. Medication alone did not, however, have a significant effect on strength of primary obsessional beliefs. But providing CBT to this wait-list group and to the nontreatment wait-list group improved all clinical measures including primary beliefs. So medication and CBT can complement each other, and the specific effect of CBT may be to help focus on and dislodge obsessional beliefs. This is supported by the outcome in the CBT with medication group, where posttreatment strength of both primary and secondary beliefs had decreased. The further improvement of the medication only group after CBT suggests that administering CBT after a period of medication may be more advantageous than providing both at the same time. Antidepressant medication has a specific antiobsessional effect, which may, consequently, lift the patient’s mood and increase confidence in coping with anxiety, permitting the psychological treatment to focus on the core beliefs. The group stabilized on medication showed a lower BDI score at baseline than the other groups, and during the wait-list period, only the medication group decreased its BDI score. The group that received CBT after medication may have continued to improve with medication alone over the second 20-week period. However, the improvement of this group after receiving CBT and the changed core beliefs suggest that CBT provided an additional specific contribution. However, although all treatment groups showed an equivalent statistically significant change, clinically speaking all groups contained patients who were still symptomatic at posttreatment evaluation. The 5-month treatment period may not be long enough to permit full remission, and in practice we have noted that improvement can occur after several more months of treatment. The medication only group received the longest period of continuous treatment and at posttreatment contained the majority of cases approaching subclinical status, a total score of 7 or less on the NIMHOCs. The positive correlation between the total Y-BOCS scales and the self-report efficacy scale is encouraging, since it suggests that, although these 2 types of scales were clinician-rated and subject-rated clinical indices respectively, they were measuring a congruent positive change in the same direction. However, the lack of consistent correlation between strength of primary and secondary beliefs and between strength of these beliefs and self-efficacy is surprising, suggesting these factors could be somewhat independent of each other. A patient may feel confident to resist a ritual while maintaining a strong conviction about the underlying obsessional belief. This result tallies with the findings of Ito and others that intensity of beliefs at baseline does not contraindicate successful control over compulsions (24). Similarly, a strong belief about the secondary consequences of not performing a ritual does not necessarily accompany a strongly held core obsessional belief. This latter finding supports current cognitive models, which dissociate the intensity of primary beliefs from the persuasiveness of negative secondary appraisals of the consequences of the primary obsessions (35). However, a cognitive appraisal model of distress predicts a high correlation between secondary beliefs and other aspects of OCD symptomatology, which was not found in the present study.

The correlation between the self-efficacy and Y-BOCS scores could suggest that the clinician’s Y-BOCS ratings of severity of OCD may be influenced by the confidence the person has to refrain from performing the ritual rather than by the degree of conviction the person holds about the obsession behind the ritual. The Y-BOCS rating correlated highly with self-efficacy scores but not at all with the strength of primary or secondary beliefs.

A key limitation of the present study is the small number of subjects in each subgroup. However, significant improvements were achieved in clinician and subject measures across groups, and the power of the analysis was adequate to conclude potentiating effects of CBT and medication in the treatment of OCD.

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**Clinical Implications**
Both cognitive-behaviour therapy (CBT) and medication are more effective than no treatment in reducing obsessive– compulsive behaviour.

The combination of CBT and medication seems to potentiate treatment efficacy.

The specific effect of CBT may be to help focus on and dislodge obsessional beliefs.

Limitations

- There were small and unequal numbers of subjects in each treatment group.
- The 5-month treatment period may not have been long enough to permit full remission.
- This study lacked long-term follow-up.

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References

Résumé

Objectif : Évaluer l’effet de la combinaison de la thérapie cognitive du comportement (TCC) avec les médicaments pour traiter le trouble obsessionnel-compulsif (TOC).

Méthode : Vingt-neuf sujets ayant reçu un diagnostic de TOC, selon les critères du Manuel diagnostique et statistique des troubles mentaux, ont été recrutés à la Clinique d’anxiété de l’hôpital Louis-H. Lafontaine. Ils ont été évalués avant et après traitement selon l’échelle du TOC Yale-Brown (Y-BOCS), par un psychiatre aveugle au mode de traitement. Les sujets ont coté leur degré de résistance à leurs rituels et à la force de leurs convictions obsessionnelles. Ils ont ensuite reçu 1 des 4 traitements suivants : des médicaments et une TCC simultanément (n = 9), une TCC seulement (n = 6), des médicaments tout en étant sur une liste d’attente d’une TCC (n = 6) ou aucun traitement sur une liste d’attente d’une TCC (n = 5).

Résultats : L’analyse multivariable a révélé que les résultats à la Y-BOCS et les classements cliniques s’amélioraient de façon significative après traitement pour tous les groupes, sauf le groupe de contrôle sans traitement de la liste d’attente. Les sujets des groupes de traitement actif qui recevaient une TCC ont démontré une diminution de la force de leurs convictions obsessionnelles. L’administration subséquente d’une TCC aux groupes de la liste d’attente a également diminué la force de leurs principales convictions obsessionnelles à l’égard des conséquences de la non-exécution de leurs rituels.

Conclusions : Nos résultats suggèrent que soit la TCC, soit les médicaments à eux seuls sont plus efficaces qu’aucun traitement. La combinaison de la TCC avec les médicaments semble amplifier l’efficacité du traitement, et nous avons constaté qu’il était plus profitable sur le plan clinique d’introduire la TCC après une période de médication, plutôt que de commencer les deux traitements simultanément.

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1Senior Clinical Researcher, Fernand-Seguin Research Center, Louis-H Lafontaine Hospital; Department of Psychiatry, University of Montreal, Montreal, Quebec.
2Psychiatrist, Louis-H Lafontaine Hospital, Montreal, Quebec.
3Psychologist, Fernand-Seguin Research Center, Louis-H Lafontaine Hospital, Montreal, Quebec.
4Department of Psychiatry, Université de Montréal, Montreal, Quebec; University Department of Psychiatry, Prilly-Lausanne, Switzerland.
Address for correspondence: Dr K O’Connor, Fernand-Seguin Research Center, 7331 Hochelaga Street, Montreal, QC H1N 3V2
email: Kieron.Oconnor@crfs.umontreal.ca