

ORIGINAL ARTICLE

## Comparison of eye movement desensitization and reprocessing with citalopram in treatment of obsessive–compulsive disorder

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### Abstract

**Objective.** Obsessive–compulsive disorder (OCD) is one of the chronic anxiety disorders that interfere with routine individual life, occupational and social functions. There is controversy about the first choice of treatment for OCD between medication and psychotherapy. **Aim.** the aim was to investigate the efficacy of eye movement desensitization and reprocessing (EMDR) compared with medication by citalopram in treatment of OCD. **Methods.** This randomized controlled trial was carried out on 90 OCD patients that randomly were assigned into two groups. They either received therapeutic sessions of EMDR or citalopram during 12 weeks. Both groups blindly were evaluated by the Yale–Brown scale before and after the trial period. **Results.** Pretreatment average Yale–Brown score of citalopram group was about 25.26 as well as 24.83 in EMDR group. The after treatment scores were 19.06 and 13.6, respectively. There was significant difference between the mean Yale–Brown scores of the two groups after treatment and EMDR was more effective than citalopram in improvement of OCD signs. **Conclusion.** It is concluded that although both therapeutic methods (EMDR and Citalopram) had significant effect in improving obsessive signs but it seems that in short term EMRD has better effect in improvement of final outcome of OCD.

**Key Words:** *Obsessive–compulsive disorder, eye movement desensitization and reprocessing, citalopram*

### Background

Obsessive–compulsive disorder (OCD), a severe disabling anxiety disorder, with a prevalence of 2% worldwide it is the fourth most common psychiatric disorder which leads to considerable psychosocial problems and decreases the quality of life in comparison with other psychotic disorders [1–4].

The main characteristics of OCD are existence of repetitive worrisome thoughts, imaginings and behavior [1–3].

Evidence showed that signs and symptoms of OCD begin from childhood in 30–50% of patients [5]. The exact etiology of OCD is not well understood but biological, genetic, cognitive and behavioral dysfunctions are among the most important factors. Up to 30 years ago, OCD was assumed to be an untreatable disease, but during recent years new methods have been developed for OCD management, including drugs such as selective serotonin reuptake inhibitors (SSRI), and also cognitive or behavioral treatment methods [2,3,6].

SSRIs including fluoxetine, fluvoxamine, paroxetine, ceteraline and citalopram were considered as the first line treatment of OCD [7–9].

Citalopram is an SSRI agent the efficacy of which has been approved in previous studies, especially in medical treatment of OCD in children. While there is no significant difference between different doses, low-dose citalopram is also useful in untreatable cases [7,8,13–15]. In some studies citalopram has been effective in treatment of OCD [16,17], and even its efficacy and tolerability in the long-term treatment of childhood and adolescent OCD has been comparable with other SSRIs [18]. In spite of the effectiveness of drug therapy, approximately 20–40% of patients remain non-responders [1].

Although, there is not enough data on the comparison of drug therapy and cognitive behavior therapy (CBT) in OCD, CBT has been considered as efficient as drug therapy in this disorder and even, according to some data, its beneficial effects are more long lasting.

Main behavioral approaches in OCD treatment include exposure and response prevention, desensitization, thought stopping, flooding, implosion therapy and aversion conditioning.

However, the number of patients with complete improvement by this method is very small.

Treatment refusal and drop-out at the beginning of therapy is common with a 50% or more reduction in cure rate [19–21]. Considering this fact and results of investigations, combination of drug therapy and CBT, especially in cases with family history of OCD, is the most effective option [14,22,23].

Eye movement desensitization and reprocessing (EMDR) was first introduced by Francine Shapiro in 1987, and was used for treatment of psychologically traumatized individuals for a long time. In this method, patients are exposed to parts of a traumatic memory. At the same time, the patient generates rhythmic eye movements, hand taps or auditory tones. It is assumed that by alternating external stimuli, the patient can emotionally process negative memories [24]. Favorable results with EMDR treatment have been reported in various psychiatric disorders such as phobia and panic disorder, post stress traumatic disorder (PTSD), dissociative disorder, performance anxiety and somatoform disorder [25]. Considering the positive effects of EMDR in the treatment of psychological and anxiety disorders, its application in the treatment of OCD may be of beneficial.

### Aim

The main purpose of this study was to compare the efficacy of EMDR as a therapeutic method with drug therapy using citalopram in the treatment of OCD.

### Materials and methods

This study was designed as a single blind randomized controlled clinical trial.

#### *Inclusion criteria*

All OCD patients admitted at the psychiatric clinic of Khorram-abad Hospital affiliated to Khorram-abad University of Medical Sciences were included based on clinical interview and using the DSM-IV-TR and Yale–Brown obsessive–compulsive disorder scales. The enrolled patients were not receiving any psychotherapy or any other psychiatric drug.

#### *Exclusion criteria*

According to psychiatric history and mental examination, patients with any special clinical problem,

including serious medical disorders, drug misuse or other psychiatric disorders (Axis I) during the previous year, were excluded from the study.

#### *Randomization*

After receiving a signed letter of consent, 90 selected patients were randomly assigned into the two following groups: 47 patients in the EMDR and 43 in the citalopram group; some patients were treated with consecutive sessions of eight phases EMDR (history taking, target appointment, specifying place and image, performance, desensitizing, installation, body scan and debriefing) and other patients received citalopram, 20 mg daily, through 12 weeks. Seventeen patients from the citalopram group and 13 patients from the EMDR group lost to follow-up and excluded from final analysis (30 patients remained in each group until the end of study). Before and at the end of treatment period in each group patients were evaluated by a psychologist who was blind to the type of treatments.

At the end of treatment period in each group, patients were evaluated again using the Yale–Brown scale and then the collected data were analyzed regarding scores recorded before the beginning of treatments.

The Yale–Brown obsessive–compulsive scale is one of the scoring systems that usually is used for diagnosis of OCD and contains five variables for obsessive thoughts and five variables for obsessive behaviors including frequency, intermixing results, discomforts, confrontation and the rate of individual control. There are five scale options (0 to 4) for each variable based on the existence or loss of every signs. The most upper grades are associated to most severity of disorder.

The protocol for the research was approved by the ethic committee of the Khorram-abad University of Medical Sciences.

EMDR integrates elements of imaginal exposure, cognitive therapy, psychodynamic and somatic therapies. It also uses the unique and somewhat controversial element of bilateral stimulation (e.g., moving the eyes back and forth). For this purpose the patient generates a number of lateral eye movements while following the therapist's fingers moving side to side for approximately 20 s. Then the patient is asked to report current sensations, cognitions, and affect, followed by another set of eye movements. This process is repeated again and finishes when the patient reports a 0 or 1 on Wolpe's Subjective Units of Discomfort Scale (SUDS) to the traumatic memory. Negative cognition is replaced with positive cognition and patient provides a validity of cognition rating to indicate the extent to which he/she feels that the positive cognition is true [25–27].

Table I. Distribution of patients' demographic data between two groups of randomized clinical trial.

Groups	Sex		Age (years)				
	Female	Male	10–20	21–30	31–40	41–50	>51
Citalopram (%)	17 (56.7)	13 (43.3)	7 (23.3)	11 (36.7)	6 (20)	4 (13.3)	2 (6.7)
EMRD (%)	10 (33.3)	20 (66.7)	4 (13.3)	12 (40)	8 (26.7)	4 (13.3)	2 (6.7)

### Therapy process

EMDR treatment consists of eight essential phases. The first phase includes history taking and planning of treatment. In this phase the therapist determines potential targets for EMDR. At the second phase (or preparation phase) EMDR procedures and treatment effects are introduced to the patient. The third phase includes assessing the target based on SUD (Subjective Units of Distress) and VOC (Validity of Cognition) scales. In the fifth phase (or installation) the patient focuses on an enhanced integration of the cognitive reorganization. In the body scan phase (sixth phase) the patient assesses and reports residual body tension. The seventh phase is closure and the therapist provides appropriate information and support. In the final phase (eighth phase) reevaluation is performed [25,28].

### Statistical analysis

The Yale–Brown scale scores for both groups were compared by paired sample *t*-test (before and after therapy) (considering sample size and normal distribution of data) and independent sample *t*-test (between groups) by using SPSS software version 14.00 for Windows. The level of significance for all tests was set at  $P < 0.05$  and variances were not assumed to be equal. Analysis was done according to ATP protocol.

### Results

Finally 60 patients (30 patients in each group) with obsessive–compulsive disorder completed the study. There was no significant difference in gender and ages of patients between the two groups (Table I). The average Yale–Brown scores of pretreatment in the citalopram group was  $25.26 \pm 7.55$  and  $24.83 \pm 5.35$  in EMDR group. As Table II shows, there was no significant difference in Yale–Brown scores between the groups before treatment ( $P = 0.80$ ). After 12 weeks of treatment, although the Yale–Brown scores decreased in both groups significantly, the reduction in the EMDR group was significantly more than in the citalopram group ( $P < 0.001$ ) (Table II). In Table III the mean changes from baseline have been compared; Figure 1 shows the comparison of mean score before and after treatment.

### Discussion

The evidence from this study showed that both therapeutic interventions based on medication with citalopram and EMDR could improve the signs of OCD. EMDR was more effective than citalopram in improvement of OCD signs. The empirical support for the application of EMDR (compared to medication and other therapies) in OCD is meager [29], whereas the clinical effects of EMDR in other anxiety disorders have been demonstrated in numerous case reports and controlled studies [25,28,30]. In the past years, EMDR has become increasingly popular as a treatment method for PTSD [31–33]. In a meta-analysis of PTSD studies, EMDR post-test results were comparable to behavior therapy and SSRIs in efficacy and it was even better for control of conditions [27]. In a controlled study in panic disorder with agoraphobia (PDA), EMDR was compared with both waiting list and credible attention-placebo control groups. In that study, the differences between EMDR and the attention-placebo control condition were not statistically significant and EMDR was significantly superior to waiting list [27,33]. Another study compared EMDR and CBT results in treatment of panic disorder. After treatment, the CBT group were panic-free after five sessions, whereas the EMDR group still suffered from panic attacks [33]. EMDR has been recommended as a treatment option for specific phobias also. In some controlled studies, the efficacy of EMDR has been compared with that of exposure in vivo in the treatment of specific phobias (such as spider phobia). These studies concluded that exposure in vivo consistently caused significant improvement on self-report and behavioral and physiological measures, whereas EMDR only improved self-report measures [24,33].

Table II. Comparison of Yale–Brown obsessive–compulsive scores of patients between two groups of randomized clinical trials.

Groups	Mean of scores before treatment (SD)	Mean of scores after treatment (SD)	<i>P</i> value
Citalopram	25.26 ( $\pm 7.55$ )	19.06 ( $\pm 6.49$ )	$< 0.001^*$
EMRD	24.83 ( $\pm 5.35$ )	13.6 ( $\pm 5.48$ )	$< 0.001^*$
<i>P</i> value	0.80	$< 0.001^*$	–

\* $P < 0.05$  significant.

Table III. Comparison of the mean change from baseline.

Groups	Mean of scores before treatment (SD)	Mean of scores after treatment (SD)	Mean of difference scores	P value
Citalopram	25.26 ( $\pm$ 7.55)	19.06 ( $\pm$ 6.49)	6.2 ( $\pm$ 2.61)	<0.001*
EMRD	24.83 ( $\pm$ 5.35)	13.6 ( $\pm$ 5.48)	11.2 ( $\pm$ 5.32)	
P value	0.80		<0.001*	–

\* $P < 0.05$  is significant.

However, the underlying mechanisms of this information processing are unknown and will probably remain so for years to come, owing to a lack of neuropsychological knowledge and appropriate measuring devices. However, Shapiro demonstrated when a traumatic or distressing experience occurs, it may obviate the usual pathways of coping; therefore the memory of the event is inadequately processed and unusually stored in an isolated memory network [25,28]. When this network is stimulated, the patient may re-experience the same event. In EMDR methods, activation of cognitive processing of distressing memories occurs by unusual bilateral stimulation of the brain (eye movement, bilateral sound, or bilateral tactile stimulation coupled with cognitions, visualized images and body sensation) [25].

It must be noted that when the distressing or traumatic event is an isolated event, the symptoms often can be resolved with one to three EMDR sessions. But in the case of multiple traumatic events, more sessions may be required [25].

Limitations of this study were short-term follow-up, low dose of citalopram, and no recording of the side effects.

In spite of positive results of EMDR in our study, the results must be taken into account with caution considering the study limitations and that because in

no study has EMDR been directly compared with SSRIs or psychological treatments (such as behavior and CBT).

Considering our short-term study, future prospective controlled clinical trials are required to investigate long-term effects of EMDR in OCD and to generalize and confirm these results.

### Key points

- Both therapeutic methods (EMDR and Citalopram) had significant effect in improving obsessive signs but it seems that in short term EMRD has better effect in improvement of final outcome of OCD
- Combination of psychotherapeutic methods with drug therapy may be useful in treatment of non responder patients.

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### Statement of Interest

The authors declare no conflicts of interests.

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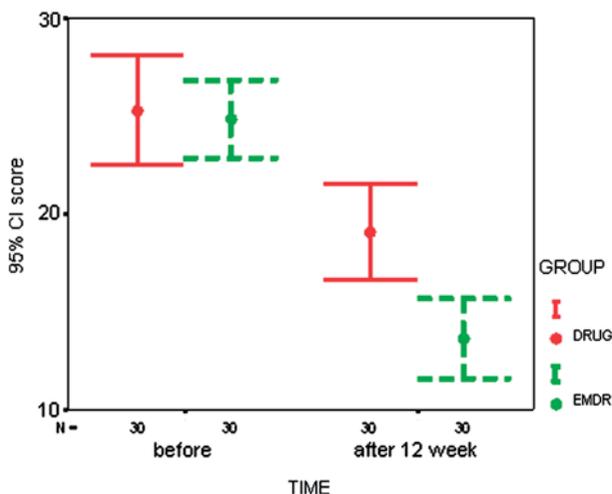


Figure 1. Comparison of mean score before and after treatment.

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