

# Effectiveness of Combined Therapy of Sertraline and Risperidone in Treating Patient with Obsessive-Compulsive Disorder

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## ABSTRACT

**Objective:** To research the effectiveness of combined therapy of sertraline and risperidone in treating patient with obsessive-compulsive disorder (OCD).

**Method:** By analyzing the pathological mechanism of OCD, this paper employed combined therapy of sertraline and risperidone to treat OCD patient, and explored the clinical effect of the combined therapy.

**Results:** After combined therapy treatment, OCD symptoms were significantly improved. Compared with traditional therapies, the combined therapy is of more significant effect. Common adverse reactions of drug therapy mainly include intestinal discomfort, headache, insomnia, lack of strength and anxiety.

**Conclusion:** The combined therapy of sertraline and risperidone has advantages including sound efficacy, instant effect, high safety, and insignificant adverse reaction, which should be widely promoted.

**Keywords:** OCD Patient, Sertraline, Risperidone, Therapy

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## **INTRODUCTION**

In clinical practice, OCD is kind of neurosis represented by symptoms including obsessive-compulsive ideas and behaviors. OCD brings different degrees of suffers and anxieties, which severely impact patient's life quality. OCD occurs among people in different ages from child to elderly people. The elderly people, in particular, most of which have suffered physical diseases already, OCD brings mental problems to them. The OCD symptoms of elderly patients are dominated by OC ideas, which lead to bad psychologies such as pain, desperation, helplessness. In recent year, the combined therapy of sertraline and risperidone has achieved significant therapeutic effect in clinical practice. The combined therapy can increase clinical efficacy and prognosis with higher safety; however difference may occur when using one of the drugs solely (1). To further research the clinical effect and safety in treatment of OCD, the combined therapy sertraline and risperidone was employed as the major treatment, and clinical reports are shown below.

## **SUBJECT AND METHOD**

### **Pathological mechanism of OCD**

OCD pathology: Currently the cause for OCD is not very clear, however there have been large numbers of researches showing that OCD is related to anxiety disorder, genetic factors, personality, adverse event, stimulation factors and so on, of which, the personality is the most relative factor. OCD symptoms: 1. Obsessive ideas including suspicion, recall, rumination, etc; 2. Obsessive behaviors such as repeatedly checking, repeatedly washing hands,

repeatedly counting, compulsive rituals, etc. Of all factors, the most dominate cause is the psychological factor.

According to related investigation results, in Shanghai there are 38% OCD patients who have mental disorders before OCD attacking. Those psychological factors which can lead to long-term consideration, anxiety and tension and those emergency events which bring serious shock are called induced factor of OCD. During OCD pathogenic process, social psychological factors can never be ignored. Being in state of physical fatigue for long is easy to induce OCD for patients who have compulsive character. On the other hand, there are different explanations for the pathogenesis of OCD. According to scholar of Pavlov school, in experiencing intensive emotions, human brain is subjected to cortex excitability, hypertension and psychological conflict in excitoinhibitory process, the pathological inert focus of excitation will be constructed, which thus leads to the formation of obsessive ideas and eventually the occurrence of OCD. However based on the research of psychological school, OCD is mainly induced by the restraining of aggressive impulse; Even some people who proposed their opinion through theoretical explanation that obsessive idea is the result of anxiety and simulation as well as the conditioned connection between ideas. The Basilar artery is shown as Figure 1. The Comparison of OCD and anxiety disorder nerve plate is shown as Figure 2. The two-sample brain activation map is shown as Figure 3.

### **Research design**

OCD patients treated by in our hospital in 2015 are selected as research objects in a randomized controlled trial. All qualified OCD patients are divided into control group and treatment group, wherein the former group is treated with sertraline while treatment group is

treated with combined therapy of sertraline and risperidone. Research design and data collection processes shown in Figure 4.

### **Therapeutic method**

During treating process, the control group is treated with sertraline, of which the initial dosage is controlled at 50~100mg/d. With the development of illness, the dosage can be increased and controlled at 50mg/d after two weeks of medication, wherein the largest dosage is approximately 200mg/d; On the basis of therapy of control group, the treatment group is treated by additionally adding risperidone, of which the initial dosage is risperidone, largest dosage is controlled at 4mg/d. Before treatment of both groups, other types of antipsychotic drugs are prohibited to be taken (2). The Comparison of ALEF between OCD patient and normal people under resting-state is shown as Figure 5.

## **RESULTS**

### *Basic data*

The distribution of demographics data of all selected OCD patients are: average age is  $44.65 \pm 7.5$ , wherein the youngest is 18 years old, while the oldest is 80 years old. Patients under 80 years account for 36.21%, while patients above 18 years account for 63.79%, and the elderly patients are relatively more; Female patients are slightly more than male patients; Patients at educational level of illiteracy, primary school, junior high account for 62.93%, patients at level of senior high account for 37.07%; Most patients are in marriage, accounting for 93.10%; Except one patient who is religious, other patients are not religious; Majority of

patients live with spouses, son or daughter, grandson or granddaughter, accounting for 94.83%; Most patients are now in non-duty status, accounting for 80.21%; Most patients can take care of themselves, account for 86.21%; Most patients are of economic self-sufficiency, accounting for 66.38%, while 33.62% live by partial or whole living subsidies from government and their son or daughter; Most patients pay medical expense by medical insurance, accounting for 71.55%.

### **Therapeutic effect**

According to Y-BOCS score-reducing rate: Recovery $\geq$ 75%, significantly effective $\geq$ 50%, effective $\geq$ 25%, Non-effective $<$ 25%. In treatment group, there are 300 patients with recovery, 150 patients with significantly effect, 50 patients with effect, 0 patient with non-effect, achieving total effective rate of 100%; while in control group, there are 210 patients with recovery, 90 with significant effect, 120 with effect, 80 with non-effect, achieving total effective rate of 89.76%; By comparing both groups, it can find that treatment group achieve more significant therapeutic effect. The therapeutic effect of both groups after treatment is shown as Table 1. The comparison of Y-BOCS, HAMA, HAMD scores before and after treatment is shown as Table 2.

### **Adverse reactions**

After treatment, there are totally 4 patients suffering adverse reactions, wherein 3 patients in control group show adverse reactions including gastrointestinal discomfort (1), headache and insomnia (1), lack of strength and anxiety (1), concluding the occurrence rate of adverse reaction with 25.65%; while in treatment group, there is only one showing adverse reaction of gastrointestinal discomfort (including nausea, vomiting, anorexia, diarrhea, etc), and the

occurrence rate of adverse reaction is 8.76%; Through comparing two groups, it can be seen that the treatment is significantly lower than control group in terms of occurrence rate of adverse reaction, and the differences between both groups are of statistical significance ( $P < 0.05$ ). The correlation analysis of Y-BOCS score and ALEF value of OCD patient is shown as Figure 6.

## DISCUSSION

In recent years, with the progress of China's national economy, people are suffering an increasingly economic stress and mental stress, therefore the number of OCD patients' increases dramatically. Bringing various safety risks for normal daily life and social stability, this disease must be laid with priority of prevention and treatment (3). Beside high complex pathological mechanism, OCD is also a disease with extremely high recurrence rate. The inducing factor is related to abnormal serotonin value and decreased overall activity of dopamine. Once being affected by OCD, patient's limbic system is in hyperfunctional state, which will directly impact normal daily life and life health (3).

As a common drug for treating OCD, risperidone is a benzisoxazole derivative, which has strong affinity with D2 receptor and 5-HT<sub>2</sub> receptor. After applying on D2 receptor, it can effectively relieve positive symptoms (6). Moreover, 5-HT<sub>2</sub> receptor can further relieve patient's emotional symptoms and negative symptoms. By interdicting the excitation ability of norepinephrine and 5-hydroxytryptamine (5-HT<sub>2A</sub>) receptor, it can relieve negative symptoms.

Sertraline is common drug for OCD and usually made in pills. Being able to reuptake

5-hydroxytryptamine and to selectively inhibit central nervous system, sertraline can significantly increase the content of 5-hydroxytryptamine in synaptic cleft. Therefore, it is of certain anti-depression effect and can be used for OCD treatment (7). Compared with other drugs, sertraline can not only reduce depressive symptoms, but also reduce fidgety mood, long-term fatigue and anxiety. In addition, in aspect of OCD treatment, sertraline is more significantly effective with good tolerance and high safety, and can serve as one of priority drugs for OCD.

Currently the cause for OCD is not very clear, however there have been large numbers of researches showing that OCD is related to anxiety disorder, genetic factors, personality, adverse event, stimulation factors and so on, of which, the personality is the most relative factor. Therefore, large amounts of researches have showed that the combined therapy of sertraline and risperidone has achieved significant efficacy in clinical practice (5). The OCD patients treated by in our hospital in 2015 are selected as research objects in a randomized controlled trial. All qualified OCD patients are divided into control group and treatment group, wherein the former group is treated with sertraline while treatment group is treated with combined therapy of sertraline and risperidone.

According to Y-BOCS score-reducing rate: Recovery  $\geq 75\%$ , significantly effective  $\geq 50\%$ , effective  $\geq 25\%$ , Non-effective  $< 25\%$ . Treatment group achieves total effective rate of 100%; while the control group achieve total effective rate of 89.76%. By comparing both groups, it can find that treatment group achieve more significant therapeutic effect ( $P < 0.05$ ). After treatment, there are totally 4 patients suffering adverse reactions, wherein 3 patients in control group show adverse reactions including gastrointestinal discomfort (1), headache and

insomnia (1), lack of strength and anxiety (1), concluding the occurrence rate of adverse reaction with 25.65%; while in treatment group, there is only one showing adverse reaction of gastrointestinal discomfort (including nausea, vomiting, anorexia, diarrhea, etc), and the occurrence rate of adverse reaction is 8.76%. Through comparing two groups, it can be seen that the treatment is significantly lower than control group in terms of occurrence rate of adverse reaction, and the differences between both groups are of statistical significance ( $P < 0.05$ ).

## **CONCLUSION**

In all, the combined therapy of sertraline and risperidone can be used to treat refractory OCD with advantages including sound efficacy, instant effect, high safety, and insignificant adverse reaction, which should be widely promoted.

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Authors Contribution: The first two authors (Suping Yue and Hanwen Jiang) contributed equally to this work.



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Table 1: Therapeutic effects of both groups after treatment [n (%)]

<b>Group</b>	<b>No of patient</b>	<b>Recovery</b>	<b>Significantly effect</b>	<b>Effective</b>	<b>Non-effect</b>	<b>Effective rate (%)</b>
Treatment group	500	300	150	50	0	100
Control group	500	210	90	120	80	89.76

Table 2: Comparison of Y-BOCS, HAMA, HAMD scores before and after treatment  
(n=20,  $\bar{x} \pm s$ )

<b>Group</b>	<b>No of patient</b>	<b>Y-BOCS Before and after treatment</b>	<b>Y-BOCS Before and after treatment</b>	<b>Y-BOCS Before and after treatment</b>
Treatment group	50	21.43±3.43	12.76±6.76	11.67±5.23
Control group	50	20.32±5.22	13.65±5.76	11.78±6.87
	0	8.94±3.21	4.65±1.46	4.77±2.11
	0	11.54±2.43	8.65±2.67	7.90±3.87

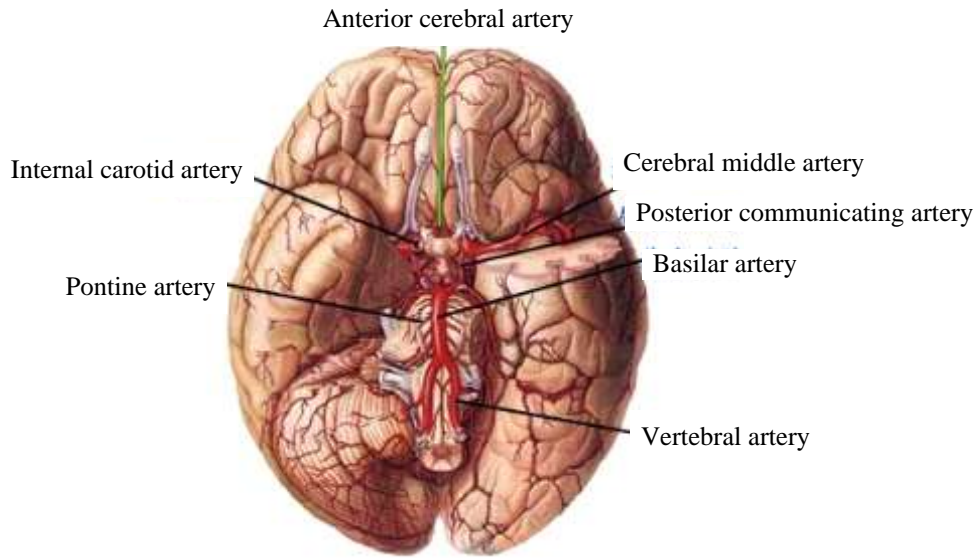


Fig. 1: Basilar artery.

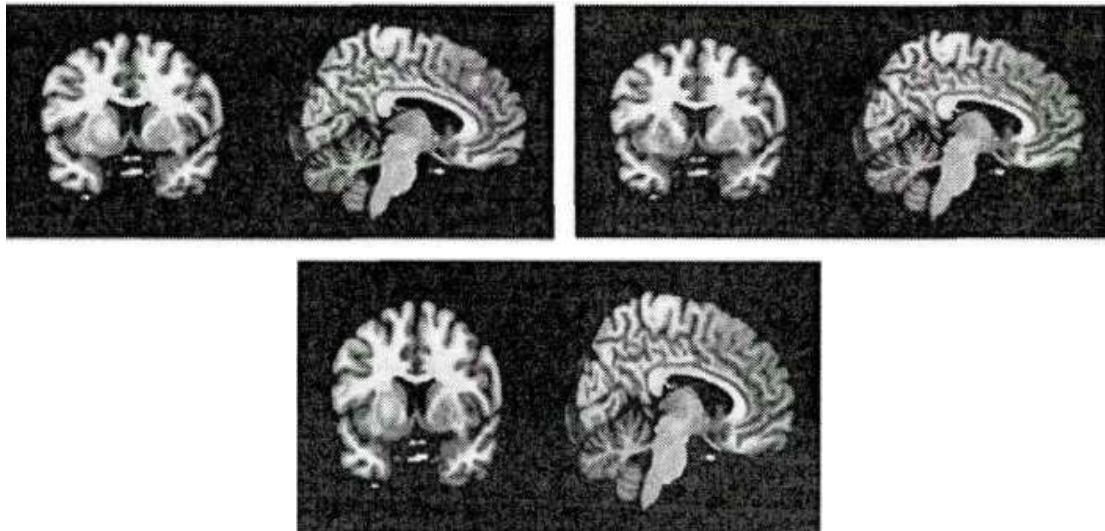


Fig. 2: Comparison of OCD and anxiety disorder nerve plate

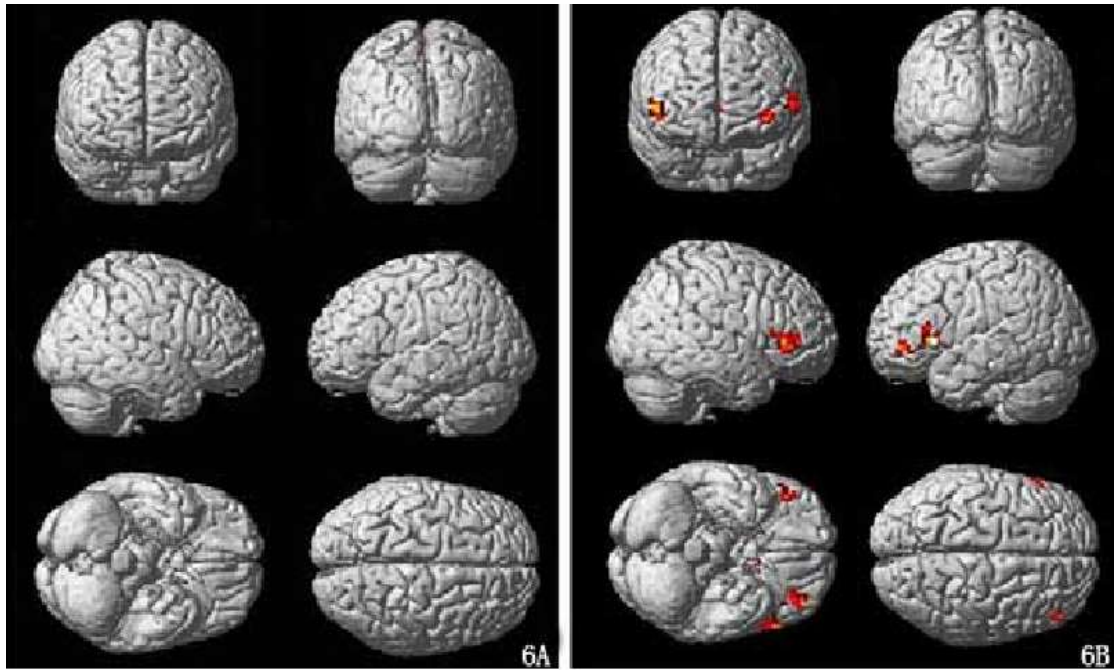


Fig. 3: Two-sample brain activation map.

6A: Activated encephalic region of OCD patient is not higher than that of normal control group  
6B: Activated encephalic region of OCD patient is lower than that of normal control group mainly including left anterior cingulate, nucleus caudatus and bilateral orbitofrontal cortices

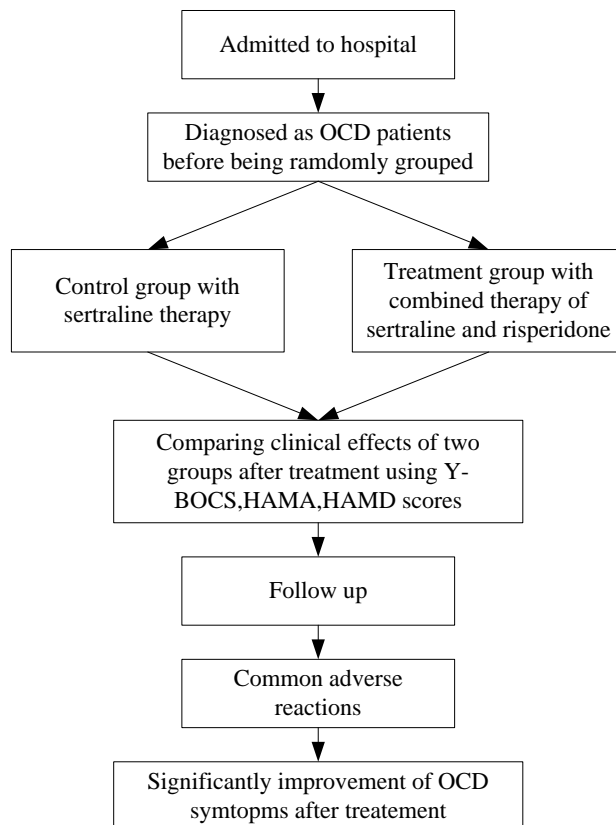


Fig. 4: Flow chart of data collection.

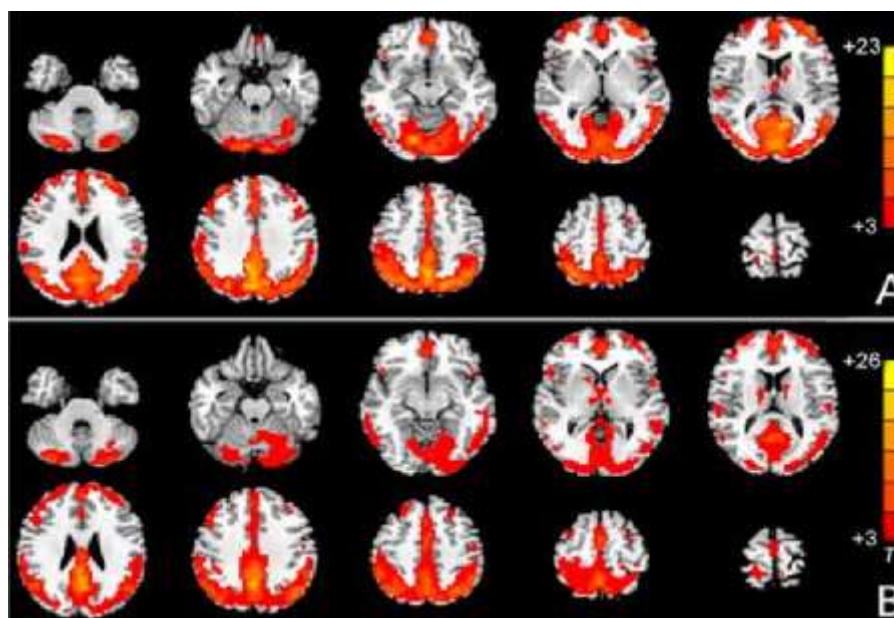


Fig. 5: Comparison of ALEF between OCD patient and normal people under resting-state  
 A: ALEF of OCD patient; B: ALEF of normal people ( $P < 0.01$ , corrected by Alphasim)

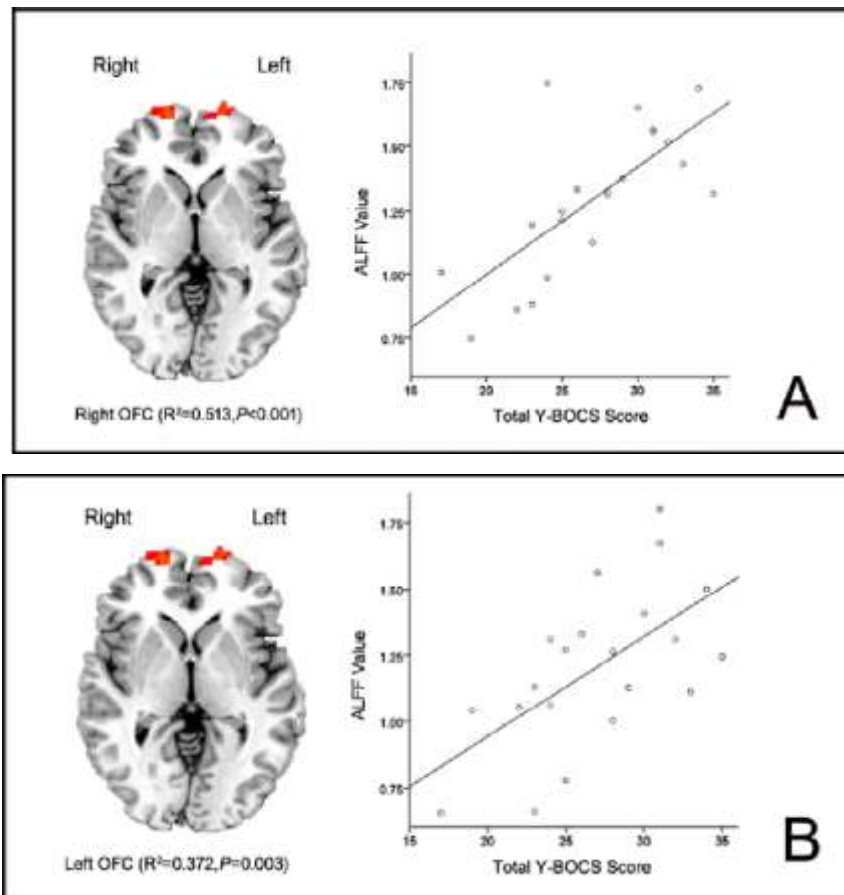


Fig. 6: Correlation analysis of Y-BOCS score and ALFF value of OCD patient

A Result of correlation analysis of right orbitofrontal cortex; B Result of correlation analysis of left orbitofrontal cortex (non-corrected,  $P < 0.005$ ).