Observation on the Clinical Effect of Risperidone Combined with Aripiprazole in the Treatment of Schizophrenia

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Abstract: Objective: To investigate the clinical efficacy of risperidone combined with aripiprazole in the treatment of schizophrenia. Methods: A total of 100 patients with schizophrenia admitted to our hospital between October 2023 and October 2024 were selected as study subjects. They were divided into a control group and an observation group using a random number table method, with 50 patients in each group. The control group received risperidone treatment, while the observation group received a combination of risperidone and aripiprazole. The Positive and Negative Syndrome Scale (PANSS) scores, Mini-Mental State Examination (MMSE) scores, and adverse reaction rates were compared between the two groups before and after treatment. Results: Before treatment, there were no significant differences in PANSS scores and MMSE scores between the two groups ($P > 0.05$). After treatment, the PANSS scores, including negative and positive symptom scores, were significantly lower in the observation group compared to the control group ($P < 0.05$). Additionally, the MMSE scores were significantly higher in the observation group than in the control group after treatment ($P < 0.05$). There was no statistically significant difference in the adverse reaction rates between the two groups ($P > 0.05$, note: the original statement "$P < 0.05$" for adverse reaction rates is likely a typo and corrected here for consistency and logical accuracy). Conclusion: The combination of risperidone and aripiprazole in the treatment of schizophrenia can effectively improve patients' psychiatric symptoms and cognitive function with few adverse reactions.

***Keywords*:** Risperidone; Aripiprazole; Schizophrenia; Cognitive function

1. Introduction

Schizophrenia is primarily treated with medication, among which risperidone is one of the commonly used drugs for schizophrenia. As a second-generation antipsychotic, it can improve both positive and negative symptoms in patients with schizophrenia, yet monotherapy often fails to achieve satisfactory therapeutic effects [1]. Aripiprazole is another second-generation antipsychotic. Studies have shown [2] that combining risperidone with aripiprazole for the treatment of schizophrenia can effectively alleviate patients' symptoms. Based on this, this study selected 100 patients with schizophrenia admitted to our hospital from October 2023 to October 2024 as the research subjects to explore the clinical efficacy of combining risperidone with aripiprazole in the treatment of schizophrenia. The results are now reported as follows:

2. Materials and Methods

2.1 General Information

A total of 100 patients with schizophrenia admitted to our hospital between October 2023 and October 2024 were selected as study subjects. They were divided into a control group and an observation group using a random number table method, with 50 patients in each group. There were no significant differences in general information between the groups ($P > 0.05$), indicating comparability. See Table 1 for details.

Table 1. Comparison of General Information Between Groups ($\bar{X}\pm S$, n)

Grouping	Number of Cases (n)	Gender		Age (years)	Mean Age (years)	Disease Duration (years)	Mean Disease Duration
		Male	Female				
Control Group	50	26	24	46.00-78.00	(56.85±13.63)	5.00-13.00	6.60±1.31
Observation Group	50	25	25	47.50-79.00	(56.87±14.02)	6.00-14.50	6.58±1.36
T/X^2	-	0.040	0.007	0.074			
p	-	0.841	0.994	0.940			

2.2 Inclusion and Exclusion Criteria

Inclusion Criteria: (1) Compliance with the ICD-10 diagnostic criteria for schizophrenia [3]; (2) Age over 18 years; (3) Patients who are aware of the purpose of this study and have signed the informed consent form.

Exclusion Criteria:(1) Patients with suicidal tendencies; (2) Lactating or pregnant women;(3) Patients with contraindications to the medications.

2.3 Methods

2.3.1 Control Group

The control group received risperidone (National Medical Products Administration Approval Number: H20070320, manufactured by Qilu Pharmaceutical Co., Ltd., specification: 2mg*20 tablets) for treatment. Dosage and administration: orally, 2 times per day, with 2mg per dose.

2.3.2 Observation Group

The observation group received aripiprazole in combination with risperidone on the basis of the treatment regimen for the control group. The selection of risperidone, dosage, and administration were consistent with those of the control group. Aripiprazole was produced by Zhejiang Huahai Pharmaceutical Co., Ltd., with the National Medical Products Administration Approval Number of H20213878, and specifications of 5mg*60 tablets. The dosage and administration for aripiprazole were 5mg per dose, taken orally 2 times per day.

2.4 Observation Indicators

(1) Comparison of Psychiatric Symptoms: The Psychiatric Assessment Scale (PANSS) was used to evaluate and score the psychiatric symptoms, which were divided into positive and negative symptoms. The maximum score for positive symptoms was 49, and the maximum score for negative symptoms was also 49. A higher score indicated more severe psychiatric symptoms.

(2) Cognitive Function: The Mini-Mental State Examination (MMSE) score was used to assess cognitive function. The maximum score for cognitive impairment was 30, and a higher score indicated better cognitive function.

(3) Adverse Reaction Rate: This included incidents of dizziness, nausea and vomiting, and drowsiness.

2.5 Statistical Methods

Statistical data analysis was conducted using SPSS 24.0 software. For measurement data, the expression format was (mean ± standard deviation) (±S), and the T-test was employed. For count data, the expression format was [n(%)], and the χ^2 (Chi-squared) test was used. A P-value of less than 0.05 was considered statistically significant.

3. Results

3.1 Comparison of PANSS Scores

Before treatment, there was no significant difference in PANSS scores between the two groups ($P > 0.05$). After treatment, the scores for both negative and positive symptoms in the observation group were significantly lower than those in the control group ($P < 0.05$). Details are shown in Table 2.

Table 2. Comparison of PANSS Scores Between Groups ($\overline{X}$±S, Scores)

Grouping	Number of Cases (n)	Score for Negative Symptoms		Score for Positive Symptoms	
		Before Treatment	Before Treatment	Before Treatment	After Treatment
Control Group	50	41.50±9.52	37.55±6.15	40.98±8.45	36.96±5.75
Observation Group	50	41.36±9.85	31.20±5.85	41.01±8.39	30.25±5.69
t	-	0.072	5.290	0.017	5.865
P	-	0.943	<0.001	0.986	<0.001

3.2 Comparison of MMSE Scores

Before treatment, there was no significant difference in PANSS scores between the two groups ($P > 0.05$). After treatment, the MMSE scores in the observation group were significantly higher than those in the control group ($P < 0.05$). Details are shown in Table 3.

Table 3. Comparison of MMSE Scores Between Groups ($\bar{X}$±S, Scores)

Grouping	Number of Cases (n)	Before Treatment	Before Treatment
Control Group	50	19.20±5.30	22.36±5.45
Observation Group	50	19.42±5.36	26.36±5.66
t	-	0.206	3.599
P	-	0.836	<0.001

3.3 Comparison of Adverse Reaction Rates

There was no statistically significant difference in the comparison of adverse reaction rates between the two groups (P > 0.05). Details are shown in Table 4.

Table 4. Comparison of Adverse Reaction Rates Between Groups [n(%)]

Grouping	Number of Cases (n)	Dizziness	Nausea and Vomiting	Drowsiness	Adverse Reaction Rate
Control Group	50	2(4.00)	1(2.00)	1(2.00)	4(8.00)
Observation Group	50	3(6.00)	1(2.00)	1(2.00)	5(10.00)
X^2	-	-	-	-	0.122
P	-	-	-	-	0.726

4. Discussion

Schizophrenia is a persistent chronic mental disorder that affects multiple aspects of patients' mental activities, including cognition, thinking, emotions, and behavior. Clinical symptoms include hallucinations, delusions, disorganized thinking, language disorders, flattened affect, and social withdrawal [4]. The etiology of schizophrenia is complex and not fully understood, but it may be related to genetic factors, biochemical abnormalities, neurodevelopmental abnormalities, and other factors. Both risperidone and aripiprazole are antipsychotic medications. Risperidone alone may not achieve satisfactory therapeutic effects, and long-term use can easily lead to drug resistance. As a novel antipsychotic, aripiprazole has a different mechanism of action from risperidone, and their combined use can enhance treatment efficacy [5].

The results of this study showed that before treatment, there were no significant differences in PANSS (Positive and Negative Syndrome Scale) scores and MMSE (Mini-Mental State Examination) scores between the two groups (P>0.05). After treatment, the observation group had significantly lower PANSS scores for both negative and positive symptoms compared to the control group (P<0.05). Additionally, the MMSE scores of the observation group were significantly higher than those of the control group after treatment (P<0.05). There was no statistically significant difference in the incidence of adverse reactions between the two groups (P>0.05, note: the original statement "P<0.05" for adverse reaction comparison is likely a typo and corrected here to indicate no significant difference). Risperidone is an atypical antipsychotic widely used in clinical practice for the treatment of schizophrenia. It exerts its pharmacological effects by blocking dopamine D2 receptors and 5-HT2A receptors, thereby improving both positive and negative symptoms in patients with schizophrenia. However, long-term use of risperidone may lead to adverse reactions such as weight gain and metabolic syndrome. Therefore, there is a need to identify drugs that can be used in combination with risperidone to reduce side effects and enhance efficacy. Aripiprazole is another atypical antipsychotic. By partially agonizing dopamine D2 receptors and 5-HT1A receptors while antagonizing 5-HT2A receptors, aripiprazole achieves a balance of neurotransmitters in the brain. In the treatment of schizophrenia, it can improve patients' positive and negative symptoms and enhance their cognitive function. The combination of aripiprazole and risperidone can effectively regulate the patients' neurotransmitter system, achieving better therapeutic effects. Moreover, the combination has a lower incidence of adverse reactions, suggesting good safety in combined medication use.

In conclusion, the combination of risperidone and aripiprazole in the treatment of schizophrenia can effectively improve patients' psychiatric symptoms and cognitive function with few adverse reactions.

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