

Side Effects of Risperidone

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Abstract: Introduction: Schizophrenia occurs in all populations and has been considered as a major disease with admixture of positive, negative, cognitive, mood, and motor symptoms. Risperidone is one of the new antipsychotics drug for treatment of schizophrenia. **Materials and methods:** Sampling method was easy sampling based on objective group, by completing the questionnaire. Treating dosage of Risperidone was determined by the psychiatrist in terms of patient's condition. Patients visited 3 times during the research by psychiatrist. **Result:** there are some side effects of risperidone; Parkinsonism is the most of them. Parkinsonism clearly developed in men more than women and clearly increased along with increasing dose of Risperidone, particularly in over 4mgr/day doses. **Conclusion:** we recommended the anticholinergic drug started at first with risperidone.

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Introduction:

Schizophrenia occurs in all populations and has been considered as a major disease entity over the past century; its causes and pathogenesis remain obscure. The incidence varies geographically and temporally. The annual incidence of Schizophrenia averages 10 to 15 per 100,000 and the prevalence in the range of 1.4 to 4.6 per1000. The main age range of risk for schizophrenia is 20 to 35 years (1- 4). It is characterized by an admixture of positive, negative, cognitive, mood, and motor symptoms whose severity varies across patients and through the course of the illness. Schizophrenia tends to be a chronic and relapsing disorder with generally incomplete remissions, variable degrees of functional impairment and social disability. Positive symptoms include delusions, hallucinations and other reality distortions. Negative symptoms involve a blunting or loss of a range of affective and conative functions. These include impairments in affective experience and expression, abulia, alogia, anhedonia, avolition, apathy, and reduced social drive. Disorganization of behavior frequently co-occurs with formal thought disorder. Disorganized thinking and behavior are heritable and, more prominent during acute exacerbations, relatively persistent, and associated with poor outcomes. Impairments in affective experience and expression (negative symptoms) have

long been considered to be cardinal features of schizophrenia and often precede the onset of psychosis by several years. The full-blown catatonic syndrome can occur in the context of stupor or excitement, and is characterized by echolalia, echopraxia, automatic obedience, waxy flexibility, and extreme negativism (5-10). The management of schizophrenic patient presents a dual dilemma for the physician, because schizophrenic patients may appear to be less cooperative than medical patients without concurrent psychiatric illness (11). Antipsychotic drugs are the mainstay of the treatment for schizophrenia. Antipsychotic drugs are typical (traditional) and atypical (novel). One of the atypical antipsychotic drugs is Risperidone, with a unique biochemical profile (12). Side effects of pharmacological treatment in schizophrenia continue to be a major issue in spite of the development of new antipsychotics. Risperidone has some adverse effect : tremor, rigidity, weight gain, extra pyramidal side effect, dysarthria, adverse effect on eye movement, dizziness, ... (13-22). Most of these articles emphasize that the Risperidone has a favorable risk/benefit profile and it is superior to typical antipsychotics and it has less side effect to typical antipsychotics. But we saw more side effect of Risperidone in patient with schizophrenia refer to psychiatry clinic. Therefore we survey side effect of

Risperidone in 50 patients with schizophrenia refer to Shahid Mofetteh psychiatry Clinic in Yasouj, south of Iran.

Methods and Materials:

This study is a descriptive study which is conducted as longitudinal form and without any interference; it is provident and field study in terms of time and operation, respectively this research is the prevalence of side effects of Risperidone (an antipsychotic drug, produce in Iran by Sobhan daru co.) in patients with schizophrenia who refer to Shahid Mofatteh Clinic of Yasouj city, south of Iran.

Inclusion criteria: patients with Schizophrenia who were diagnosed by the psychiatrist based on DSM IV-TR criterion, Age 15-60 years, no any history of disease and drug consuming previously.

Exclusion criteria: Patients whose families were disagreed with this plan because of different excuses such as social problems, worrying about divulging family's problems and tribal prejudices were rejected of this plan. Patients who did not cooperate in treatment, announcement and recording side effects. Patients who developed any medical disease during this study.

Studied population includes 50 patients with schizophrenia who referred to Shahid Mofatteh Clinic of Yasouj city, south of Iran. The control group is the same patients. Sampling method was easy sampling based on objective group, by completing the questionnaire. Treating dosage of Risperidone was determined by the psychiatrist in terms of patient's condition between 1-10 mg/day.

The questionnaire included three parts: Demographic data, Information about drug dose and time interval after treatment and Information about drug's possible side effects.

Patients visited 3 times during the research; first visit at the beginning of study, second visit at 14 days after treatment, third visit at 30 days after treatment. Interview, mental status examination and physical exam were done by psychiatrist based on DSM IV-TR criterion and possible side effects of Risperidone were recorded in the questionnaire at every visit.

If the patients experienced side effects in 2-13 days or 15-30 days intervals, they or their families called the psychiatrist for another visit and after interview, mental status examination and physical exam, their possible side effects were recorded in questionnaire.

After collecting information, they were analyzed using SPSS software. Frequency tables, central indices and variation were used to describe information.

It is necessary to mention that this research was carried out by permission of the Vice Chancellor for Research of Yasouj University of Medical Sciences

and the confirmation of Ethical committee of this University and also acquiring the patients' satisfaction and informed consent of them and their family.

Results:

The current study was conducted on 50 patients with schizophrenia who referred to Shahid Mofatteh Clinic of Yasouj city (south of Iran), they were treated by Risperidone. This study aimed at analyzing possible side effects of Risperidone on them, so the following results were found:

These 50 patients included 32 men (64%) 18 women (36%). 18 patients were married (36%) and 32 patients were single (64%).

14 patients (28%) were 20-30 years old (the most). The youngest patient had 19 years old and the oldest one was a 60years old. Mean age of statistics community was 38.3 years.

20 patients (40%) were illiterate and were not able to write and read, 20 patients (40%) had education lower than diploma and only 10 patients (20%) had diploma or higher education.

Minimum and maximum applied doses were 2 and 10 mg/day respectively. 16 patients (32%) consumed 4 mg/day Risperidone (most frequency) and others used other doses. The average used dose was 4.8 mg/day.

Side effects (showed in table 1):

Parkinsonism: 4 individuals (8%) complained of Parkinsonism at 5th and 7th days, its prevalence reached to 27 patients (54%) at 14th day, and finally at 30th day of study 2 another person complained of Parkinsonism, thus 29 patients (58%) complained of Parkinsonism at the end of this study.

Increase of Appetite: 8 patients (16%) mentioned intense increase of their appetite occasionally and 4 patients (8%) reported intense appetite continuously. Appetite trend was unchanged since 14th to 30th day and totally 12 people (24%) suffered from this side effect. Occasional increased appetite and continuous increased appetite are discriminated by the interviewer in the questionnaire.

Tremor: 4 patients (8%) complained of fine tremor.

Sexual interest: 4patients (8%) complained of decreased sexual interest at 30th day of follow-up.

Agitation: 4 patients (8%) complained of occasional intermediate agitation at 14th day of follow-up, one of them was cured at 30th day.

Galactorrhea: 1 patient (2%) complained of galactorrhea at 30th day of follow-up.

Diarrhea: Only 2 patients (4%) complained of diarrhea was treated without any interference at 10th day.

Constipation: Only 2 patients (4%) complained of constipation which was cured at 30th day.

Fatigue: Only 2 patients (4%) complained of occasionally fatigue which was cured after 25 days after Risperidone commence.

Dizziness: Only 2 patients (4%) complained of occasionally intermediate dizziness at 30th day follow-up, his dizziness has been cured.

There is no complained of any other side effect.

Relation between side effects and drug dosage was shown in table 2, fig 1 and 2: amongst analyzed

side effects of this study, Parkinsonism clearly increased along with increasing dose of Risperidone, particularly in over 4mgr/day doses. There was not found any relation between increased drug dose and development of other side effects. Parkinsonism clearly developed in men more than women. There was not found any relation between patients' sex and development of other side effects (table 3).

Table1: Distribution of recorded side effects of risperidone during two stage of study

Side effect	Since start day to 14 th day	Since 14 th to end of study	Since start to end of study (50 patients=100%)
parkinsonism	27(54%)	2(4%)	29(58%)
Increased appetite	12(24%)	0(0%)	12(24%)
Tremor	4(8%)	2(4%)	6(12%)
Decrease of sexual interest	0(0%)	4(8%)	4(8%)
Agitation	2(4%)	2(4%)	4(8%)
Diarrhea	2(4%)	0(0%)	2(4%)
Fatigue	2(4%)	0(0%)	2(4%)
Dizziness	2(4%)	0(0%)	2(4%)
Galactorrhea	1(2%)	0(0%)	1(2%)
Constipation	1(2%)	0(0%)	1(2%)

Table 2: Development of Parkinsonism in terms of received drug dose

Parkinson/dose	2mgr	3mgr	4mgr	6mgr	8 mgr	All patients
Positive	2 patient	1 patient	7 patients	11patients	8 patients	29patients
Negative	6patients	2 patient	10 patients	2 patient	1 patients	21 patients
All patients	8 patients	3patients	17patients	13 patients	9 patients	50 patients

Table 3: Distribution of Parkinsonism symptoms in patients in term of sex.

Parkinsonism symptoms	Positive	Negative	Total
Male	22(69%)	10(31%)	32(100%)
Female	7(39%)	11(61%)	18(100%)

$$\chi^2 = 4.22 \quad df= 1 \quad P= 0.04$$

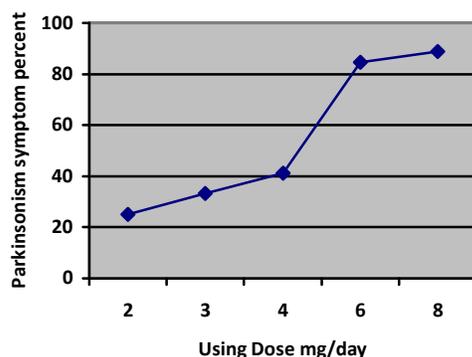


Fig. 1: relation between time and percent of Parkinsonism

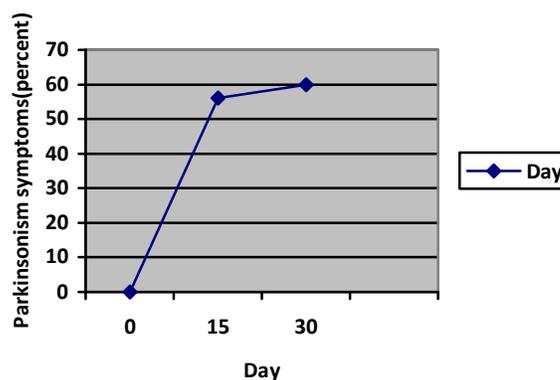


Fig2: Parkinsonism symptoms in terms of received drug at time

Discussion and conclusion:

Schizophrenia has been considered as a major disease entity over the past century, occurs in all populations. It is characterized by an admixture of positive, negative, cognitive, mood, and motor symptoms. There are typical and atypical antipsychotics drugs for treatment of schizophrenia. One of the atypical antipsychotic drugs is Risperidone. Most of articles emphasize that the Risperidone has a favorable risk/benefit profile and it is superior to typical antipsychotics and it has less side effect to typical antipsychotics. But we saw some side effect of Risperidone in patient with schizophrenia refer to psychiatry clinic. Therefore the aim of this study is determination of side effect of risperidone.

One side effect of risperidone in our study was Parkinsonism with 58% incidence, approximately the same as report of Knable et al with 42% incidence (21), but opposite to reports of Leucht et al and Yang et al with very slightly extra pyramidal side effect (14 and 18) and Page et al reported no extra pyramidal side effect (20).

Another side effect was increased appetite with 24% incidence, the same as reported of Fell et al and Verma et al (15 and 19).

Another side effect was tremor with 8% incidence but in research by Yen et al tremor was the most side effect (13).

Another side effect was rigidity reported by Yen et al but there is no reported in our study (13).

Another side effect was decrease sexual interest with 8% incidence, but in reported by Brunelleschi et al this side effect was the most (17). The low incidence of decrease libido in our study may be due to social inhibition.

Another side effect was dizziness with 4% incidence, the same as report of Yang J et al (18).

In our study there is galactorrhea, the same as report of Kleinberg et al (22). This is very difficult for unmarried female in the village area in our province.

In our study there is diarrhea and fatigue but no report in other study.

In some reports there is metabolic disorder, adverse effect on eye movement activity (12 and 16), but there is no report in our study (visited by ophthalmologist).

Conclusion:

There are some side effects of risperidone with high incidence for example Parkinsonism and it is better anticholinergic drug started at first. When galactorrhea reported by unmarried female, risperidone must discontinue due to social inhibition.

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