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One patient with schizophrenia showed reduced drug-induced extrapyramidal symptoms as a result of an alternative regimen of treatment with paliperidone 3 and 6 mg every other day

Hidenobu Suzuki[1], Hiroyuki Hibino[2], Yuichi Inoue[3], Hideo Matsumoto[4] and Katsunaka Mikami[4]

Abstract

Background: Schizophrenia is a chronic disease that requires long-term management with antipsychotics. Antipsychotic drugs are given by tapering their dose, extending the dosing interval, and so on, as part of a treatment strategy to minimize the adverse effects while at the same time maintaining efficacy.

Methods: We report the case of one patient with schizophrenia in whom the clinical symptoms were alleviated after treatment with 6 mg paliperidone. However, the patient developed extrapyramidal syndrome, for which 3 and 6 mg paliperidone were administered alternately every other day. Extrapyramidal syndrome was assessed using the Drug-Induced Extrapyramidal Symptoms Scale, Abnormal Involuntary Movement Scale, or Barnes Akathisia Scale.

Results: There was improvement in Drug-Induced Extrapyramidal Symptoms Scale score and Abnormal Involuntary Movement Scale score. However, there was almost no change in the Positive and Negative Syndrome Scale total score, positive score, negative score, or general score.

Conclusion: The results indicate the possibility of lessened adverse effects as a result of an alternative regimen of treatment with paliperidone 3 and 6 mg every other day in the maintenance phase.

Keywords

Paliperidone, extrapyramidal symptoms, tapering dose, maintenance phase, schizophrenia

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Introduction

Treatment for schizophrenia requires the administration of antipsychotic drugs not just in the acute phase but also in the maintenance or stable phase, in order to prevent relapse.[1] However, owing to the various adverse effects of antipsychotic drugs, including extrapyramidal symptoms (EPS), cardiovascular diseases, and metabolic abnormalities, due consideration must be given to minimizing their use in the maintenance phase. Antipsychotic drugs are given by tapering their dose, extending the dosing interval, and so on, as part of a treatment strategy to minimize the adverse effects while at the same time maintaining efficacy. We already reported benefit of extending the dosing interval of long-acting antipsychotic injections on two schizophrenia patients including this case.[2] Although the order of the article has been changed, we still report the effects of a long-acting antipsychotic injection that was administered at least 24 months before in one patient with schizophrenia whose clinical symptoms were alleviated by treatment with 6 mg of paliperidone. Here, we report the case of one patient with

[1]Department of Psychiatry, Suzuki Clinic, Tokyo, Japan
[2]Department of Psychiatry, Fukui Kinen Hospital, Kanagawa, Japan
[3]Department of Psychiatry, Shakomae Kokorono Clinic, Tokyo, Japan
[4]Department of Psychiatry, Tokai University School of Medicine, Kanagawa, Japan

Corresponding Author:
Hidenobu Suzuki, Department of Psychiatry, Suzuki Clinic, 3-34-16 Hamadayama, Suginami, Tokyo 168-0065, Japan.
Email: suzuhiromarket@yahoo.co.jp

schizophrenia in whom the clinical symptoms were alleviated after treatment with 6 mg paliperidone. However, the patient developed extrapyramidal symptoms (EPS), for which 3 and 6 mg paliperidone were administered alternately every other day.

Case report

The report was conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained from the patients. The anonymity of the patient has been preserved. Patient had been diagnosed with schizophrenia according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; DSM-IV-TR) criteria. EPS was assessed using the Drug-Induced Extrapyramidal Symptoms Scale (DIEPSS),[3] Abnormal Involuntary Movement Scale (AIMS),[4] or Barnes Akathisia Scale (BAS).[5] Patient fulfilled the following criteria for at least 6 months during paliperidone 6 mg treatment, and patient's mental symptoms were stable: (1) Positive and Negative Syndrome Scale (PANSS)[6] total score <70 and (2) a score below 3 for all the parameters in PANSS, namely, conceptual disorganization, hallucinatory behavior, suspiciousness, and unusual thought content (Table 1).

The outpatient was a 23-year-old woman with paranoid schizophrenia (duration of illness, 6 years), observed bradykinesia, dystonia, and dyskinesia under paliperidone 6 mg treatment. Mild EPS was observed during the paliperidone treatment (6 mg). However, because the patient's psychiatric symptoms were stabilized, the patient very much wanted to avoid recurrence. Therefore, 3 and 6 mg daily doses were alternated. Because it avoided the risk of worsening patient's mental symptoms under paliperidone 3 mg treatment, 3 and 6 mg paliperidone were administered alternately every other day. The following characteristics improved, 6 months after 3 and 6 mg paliperidone were administered alternately every other day: PANSS total score (65 to 61), negative score (21 to 19), general score (33 to 31), DIEPSS (8 to 6), and AIMS (10 to 8). On the contrary, there was no change in the PANSS positive score (11 to 11) and BAS (0 to 0).

Table 1. Subject characteristics.

Age (years)	23
Education (years)	14
Duration of illness (years)	5
Age at onset (years)	18
Hospitalization history	0
PANSS total score (baseline)	65
Conceptual disorganization	2
Hallucinatory behavior	2
Suspiciousness	2
Unusual thought content	1
Paliperidone (mg/day) (baseline)	6

PANSS: Positive and Negative Syndrome Scale.

Discussion

In this study, alternating the daily doses (3 and 6 mg) of paliperidone resulted in improved clinical scores, including a minimal change in the total PANSS score. In addition, the stability of the psychiatric symptoms was maintained, and the EPS were somewhat ameliorated, which improved the patient's quality of life and living skills and increased the patient's satisfaction. In clinical practice, the dosing interval is generally prescribed on the basis of serum half-life, although its validity has not been investigated thoroughly. Consistent with previous studies,[7] it is suggested that paliperidone dose reduction in stabilized schizophrenic patients improve the negative symptoms, bradykinesia, dystonia, and dyskinesia, without increasing the risk of a relapse. Consistent with this case report, earlier studies have suggested new treatment possibilities as a result of extending the traditionally prescribed dosing interval of oral antipsychotic drugs.[8] Therefore, although conclusions cannot be made from the results of only one case in this study, the results suggest that adverse effects were decreased by the reduction in the paliperidone dose during the maintenance phase. There is a need for more clinical studies involving the screening of patient groups for whom paliperidone dose could be safely reduced.

Declaration of conflicting interests

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Ethical approval

Our institution does not require ethical approval for reporting individual cases or case series.

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Informed consent

Written informed consent was obtained from the patient(s) for their anonymized information to be published in this article.

References

1. Leucht S, Tardy M, Komossa K, et al. Antipsychotic drugs versus placebo for relapse prevention in schizophrenia: a

systematic review and meta-analysis. *Lancet* 2012; 379: 2063–2071.
2. Suzuki H, Hibino H, Inoue Y, et al. Benefit of extending the dosing interval of long-acting antipsychotic injections on schizophrenics with extrapyramidal symptoms. *Psychiatry Clin Neurosci* 2017; 71: 212–213.
3. Inada T. Evaluation and diagnosis of drug-induced extrapyramidal symptoms. In: Yagi G (ed.) *Commentary on the DIEPSS and guide to its usage*. Tokyo, Japan: Seiwa Publishers, 1996, pp. 11–60 (in Japanese).
4. Guy W. *ECDEU assessment manual for psychopharmacology*. Washington, DC: US Department of Health, Education, and Welfare, 1976, pp. 534–537.
5. Bernes TR. A rating scale for drug induced akathisia. *Br J Psychiatry* 1989; 154: 672–676.
6. Kay SR, Fiszbein A and Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophr Bull* 1987; 13: 261–276.
7. Takeuchi H, Suzuki T, Remington G, et al. Effects of risperidone and olanzapine dose reduction on cognitive function in stable patients with schizophrenia: an open-label, randomized, controlled, pilot study. *Schizophr Bull* 2013; 39: 993–998.
8. Takeuchi H, Fervaha G, Uchida H, et al. Impact of once- versus twice-daily perphenazine dosing on clinical outcomes: an analysis of the CATIE data. *J Clin Psychiatry* 2014; 75: 506–511.