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Case Report / Olgu Sunumu

Addition of Lithium Therapy in a Patient with Persistent Neutropenia Triggered with Antipsychotics

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ABSTRACT

Addition of lithium therapy in a patient with persistent neutropenia triggered with antipsychotics

Decrease in leukocyte count might be seen during the use of antipsychotic medications. In such cases, treatment can be stopped or changed and blood count values must be closely monitored. As in this case report, however, if changing the treatment doesn't provide improvement in blood counts, lithium augmentation can be considered. The objective of this case report is to point out that the addition of lithium therapy may be beneficial in patients with persistent neutropenia related to typical and atypical antipsychotic drugs.

Key words: Antipsychotic, lithium, neutropenia

ÖZET

Antipsikotik kullanımıyla tetiklenen nötropeni olgusunda tedaviye lityum eklenmesi

Antipsikotik ilaçların kullanımı sırasında kan lökosit sayısında azalma görülebilmektedir. Bu tür durumlarda hastanın tedavisi kesilebilir ya da değiştirilebilir ve kan sayımı değerleri yakından izlenir. Ancak bu olgu sunumunda olduğu gibi tedavi değişikliklerinin kan tablosunda düzelmeyi sağlamadığı durumlarda, lityumla güçlendirme tedavisi düşünülmelidir. Bu olgu bildiriminin amacı, tipik ve atipik antipsikotik ilaçlara bağlı gelişen inatçı nötropeni olgularında tedaviye lityum eklenmesinin yararlı olabileceğine dikkat çekmektir.

Anahtar kelimeler: Antipsikotik, lityum, nötropeni

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INTRODUCTION

Hematologic side effects in a patient receiving antipsychotic treatment may lead to significant problems. It has been previously reported that the incidence of neutropenia during olanzapine treatment was 4.6%; however, there was no recommendation whether the antipsychotic treatment should be discontinued (1). Quetiapine is an antipsychotic agent, a member of the dibenzothiazepine group of compounds; it was reported to cause neutropenia and agranulocytosis in 1.9-4.2% of cases (2). Risperidone is a benzysoxazole derivative with an active metabolite 9-hydroxyrisperidone. Several case reports describe the occurrence of neutropenia during risperidone treatment (3). In addition, neutropenia can develop during the application of typical antipsychotics such as haloperidol and chlorpromazine, and thus it is essential to monitor the treatment course for hematological side effects (4).

In this case report, a patient with previous diagnosis of schizophrenia developed persistent neutropenia during treatment of both typical and atypical antipsychotic agents, who underwent remission of the psychiatric symptoms and displayed an improvement of neutropenia shortly after the addition of lithium treatment is presented including her one-year follow-up.

CASE

The patient is a 57-year-old woman. Based on the patient's medical records, she has been followed up with a diagnosis of schizophrenia for the past 30 years, and currently resides in a nursing home. She was poorly groomed, had blunted affect and poor thought

content, auditory hallucinations in the last psychiatric examination. She was unable to conduct activities of daily living. Her initial PANSS score was 139. Her pharmacotherapy consisted of olanzapine 30 mg/day and quetiapine 800 mg/day, which she had been taking for the last three years. Routine laboratory examinations, B12, folic acid, T3, T4 and TSH plasma levels were normal. HIV serology finding was negative. Her white blood cell count was recorded as 2600/mm^3 and a neutrophil count of 1110/mm^3. No current medical illness was able to explain the cause of her neutropenia. Her blood smear result was normal. There wasn't any general medical condition that might induce neutropenia. Hematology consultant suggested that her neutropenia was caused by a neuroleptic medication, and the current medication was discontinued. Olanzapine treatment was discontinued and risperidone treatment was initiated, and increased to 6 mg/day. The WBC and neutrophil counts were 2300/mm^3 and 1180/mm^3, respectively. There was no improvement in her neutropenia count during 8 weeks. Risperidone and quetiapine were discontinued and haloperidol 20 mg/day and chlorpromazine 300 mg/day were started. However, neutropenia persisted.

Although typical and atypical antipsychotic medications were administered in this case, the patient showed no improvement in her symptoms or leukopenia. Lithium 600 mg/day was started and lithium blood levels were measured as 0.65 meq/L after one week. After two weeks of lithium treatment, WBC and neutrophil count was recorded as 6000/mm^3 and 3670/ mm^3, respectively. The patient's PANSS score decreased to 79. Workers in the nursing home thought that the patient was more adaptable in the service, her cooperation was better, auditory hallucinations, inappropriate dressing and behaviors were decreased.

DISCUSSION

Leukopenia is the white blood cell count being below 3000/mm^3, wherea neutropenia is the neutrophil count being below 1500/mm^3. Almost all psychotropic drugs may cause leukopenia and neutropenia. Typical and atypical antipsychotic drug-induced leukopenia and neutropenia may severely affect an individual's vital functions, and thus cause mortality. When severe changes in hematological conditions are observed, it is essential to discontinue antipsychotic drugs (4). Atypical antipsychotics were gradually discontinued in this case as well. Although sequential antipsychotic trials were conducted to control the patient's psychotic symptoms, no improvement in the hematological symptoms of the patient was observed after the cessation of olanzapine.

Drug-induced leukopenia has been associated with quetiapine (5-7), olanzapine (1,8), and risperidone (9). Switching the patient's treatment regimen from atypical to typical antipsychotics did not result in an improvement in psychotic symptoms or neutropenia, and thus it was decided to utilize lithium as an add-on treatment. Lithium is commonly used to augment the efficacy of antipsychotic medications in schizophrenia (10). The hematopoietic effect of lithium involves the modulation of granulopoiesis, possibly through the activation of stem cells or by increasing G-CSF production (4). Previous reports have described the benefits of lithium addition, particularly in cases involving clozapine-induced neutropenia (11,12).

This case report shows the importance of hematological monitoring during the course of typical or atypical treatment. One interesting point in this case is that switching from a typical to an atypical antipsychotic drug did not resolve the side effects of neutropenia. In addition, the use of lithium augmentation may be helpful for the management of hematological adverse effects such as antipsychotic-induced neutropenia.

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