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The Efficacy of Ibrutinib in Two Patients with Chronic Lymphocytic Leukemia: A Case Report

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Abstract Ibrutinib known as a new development revolution in therapy of lymphoproliferative disorders like in patients with relapsed and refractory CLL. Aim of this study is efficacy of Ibrutinib in patients with CLL. First patient was 86-year-old man had a diagnosis of CLL established in January 2016. Peripheral blood smear showed 128900 WBC cells that 77 percent of it was absolute lymphocyte (99253 cells). He began receiving ibrutinib at daily dose of 140 mg by in 2016. Second patient was 58-year-old man was diagnosed with lymphoprolifirative disorder (CLL) at oncology clinic in January 2014. At diagnosis time, WBC count was 24000 and platelet count was 203000 and hemoglobin was 14.5 g/dl. Ibrutinib hold for two months and she treated with IVIG. After increased platlate count we try with a new policy consist of chlorambucil and procarbazine as a new regimen. She is stable for 9 months and we decide to decrease this combination, gradually. When in treatment of CLL you have limitation in old drug is better try a new class of target drug with low dosage, and increase to the standard dosage step by step. In this case causes drug induced thrombocytopenia.

Keywords: *CLL, Ibrutinib, Platelet, WBC*

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1. Introduction

Chronic lymphocytic leukemia (CLL) has known as a disease of mature B lymphocytes, and has been more common in the elderly and markedly more common in patients over the age of 65 years, with an incidence of 22-30 per 100,000 in Western countries [1]. Ibrutinib, an inhibitor that binds covalently to C481 of Bruton's tyrosine kinase (BTK), has produced remarkable responses in patients with relapsed and refractory CLL [2]. Major toxicities of ibrutinib include bleeding, fatigue, arthralgia, infection, and atrial fibrillation [3,4]. Lymphocytosis has been reported in ~70% of patients receiving ibrutinib [5]. Aim of this study is efficacy of Ibrutinib in patients with CLL.

2. Case Presentation 1

A 86-year-old man had a diagnosis of CLL established in January 2016. We had many limitations in his classic treatment cause of comorbid cardiac disease and old age. Peripheral blood smear showed 128900 WBC cells that 77 percent of it was absolute lymphocyte (99253 cells). Many drugs had absolutely contraindicate cuase thrombocytopenia (pltelete count <20000). He began receiving ibrutinib at daily dose of 140 mg by in 2016. The patient was having a response to the drug after 8 weeks and WBC count decreased to under to 10000 counts. And we had significant increased of platelet count. The patient is alive.

3. Case Presentation 2

A 58-year-old man was diagnosed with lymphoprolifirative disorder (CLL) at oncology clinic in January 2014. At diagnosis time, WBC count was 24000 and platelet count was 203000 and hemoglobin was 14.5 g/dl and percent of CD 19, HLADR, CD 20, CD 5 and CD 45 were 71.13%, 66.70%, 34.16%, 92.23% and 99.27%. The patient just monitoring (wait and watch) and check his lab tests (especially hematology test) about for one year after his diagnosis. At the End of this time WBC count was 107000 and platelet count was 176000 and hemoglobin was 14.1 g/dl. After that due to decreased platlate count to lower than 100000 he received oral chlorambucil chemotherapy every months for about one year. In November 2016, WBC count was 169000 and platelet count was 16000 and hemoglobin decreased to <9 g/dl. After the failure of the first line of treatment, ibrutinib and prednisolone started for him. But transiently the platelet decreased (platelet count was 9000), Ibrutinib hold for two months and she treated with IVIG. After increased platlate count we try with a new policy consist of chlorambucil and procarbazine as a new regimen. She is stable for 9 months and we decide to decrease this combination, gradually.

4. Discussion

Ibrutinib known as a new development revolution in therapy of lymphoproliferative disorders. A study said an ibrutinib-mediated pharmacodynamic effect on CLL by cell mobilization from protected bone marrow, lymph node, and spleen sites harboring stromal elements that have been shown to promote leukemic-cell proliferation, drug resistance, and survival [5]. Ibrutinib caused a transient increase in blood lymphocyte levels, which was concurrent with a reduction in lymph-node size, spleen size, or both. Continued treatment with ibrutinib led to resolution of this asymptomatic lymphocytosis, and patients were characterized as having a classic response according to the 2008 criteria of the International Workshop on CLL, with an observed response rate of 71%. Fifteen additional patients (18%) in this study had a partial response with lymphocytosis. Treatment-related lymphocytosis has been seen with other agents that target B-cell–receptor signaling; these findings have prompted several groups of CLL experts to conclude that such lymphocytosis is not a sign of progressive disease [6,7].

5. Conclusion

When in treatment of CLL you have limitation in old drug is better try a new class of target drug with low dosage, and increase to the standard dosage step by step. In this case causes drug induced thrombocytopenia. But with a old class of drugs we can control this aggressive disease, that show physician in all time must be awake for use of all historical drugs.

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