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ORIGINAL ARTICLE

Epidemiological and clinical profile of patients with chronic myeloid leukemia at Health-Care Global, Bangalore Institute of Oncology

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ABSTRACT

Health-Care Global, Bangalore Institute of Oncology is a cancer care center, which provides comprehensive care for cancer patients. Here, we present data of 350 patients diagnosed as cases of chronic myeloid leukemia over a period of 10 years. In our patient population, there was male predominance and majority of patients lied between the age group of 40 and 50 years. 90% patients were initially started on 400 mg dose of imatinib. About 30% of patient population required dose excalation due to inadequate response while 10% required dose descalation due to myelosuppression. 60% of patients had complete response by 3 months and 52% of patients had major molecular response by 1 year.

Key words: *Bangalore, chronic myeloid leukemia, chronic phase*

INTRODUCTION

In 1840, chronic myeloid leukemia (CML) was first described in France, followed by other European countries.[1] In 1960, breakthrough discovery of BCR-ABL gene was made, which finally led to development of miracle molecule imatinib in 1998.[2]

At Health-Care Global, Bangalore Institute of Oncology, which cadres services to thousands of cancer patients and was started in the year 1990, so far had provided services for around 55,000 cancer patients. We have dedicated hematolymphoid unit and over a period of 10 years we have treated almost 350 newly diagnosed CML cases.

PATIENT AND METHODS: RETROSPECTIVE DATA ANALYSIS FROM THE PERIOD OF 1st JUNE 2001-30th JUNE 2010

We had total of 350 CML cases from the period of 1st June 2001 to 30th June 2010. The case records were checked for demographic data, response to imatinib and compliance of patient and imatinib toxicity.

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RESULTS

Demographic data

Among the total of 350 CML cases, males out-numbered females, 245 (70%) of patients were males, 105 (30%) were females. About 8% of patients were less than 20 years of age, 15% were between 21 and 30 years of age, 21% were between 31 and 40 years of age,28% were between 41 and 50 years of age, 17% were between 51 and 60 years of age and 11% were more than 60 years of age. About 68% of the total were from urban population and 32% were from rural population.

Clinical profile

In our study population, majority of the patients presented with fatigue/weakness (60%) as a presenting feature. Nearly 48% of the patients had fever and 37% of the patients had weight loss. Around 20% of them had abdominal pain. And 30% were asymptomatic at the time of presentation. Around 70% of the patients had splenomegaly, 20% had hepatomegaly and 38% had pallor. Bleeding (4%) and lymphadenopathy (3%) was rarely seen. 35 (10%) of the total CML patients had diabetes, 27 (7.7%) had hypertension and none of them had tuberculosis/ischaemic heart disease /human immunodeficiency virus/hepatitis-B.

At the time of presentation, majority of the patients 315 (90.1%) presented with chronic phase. 16 (4.5%) presented with accelerated phase and 19 (5.4%) of them presented with blast phase. 32% of the total CML cases had low Sokal risk score. 40% had intermediate risk. 28% had high risk.

Among the total 350 cases, 315 (90%) patients had received imatinib 400 mg as the starting dose. Among them 37 (11.7%) of patients and 24 (17.64%) of patients received imatinib 600 mg and imatinib 800 mg respectively, as an escalating dose. 28 (8.92%) of patients who received imatinib 400 mg initially later received imatinib 300 mg due to severe myelosuppression. 35 (10%) had received imatinib 600 mg as the starting dose. 6 (1.9%) of the total developed mild-moderate (grade½toxicity) imatinib intolerance and 4 (1.26%) developed severe (grade¾toxicity) imatinib intolerance.

In our study population, three patients who were on imatinib 600 mg had progressive disease (mutation analysis revealed mutation at kinase domain site) who received dasatinib and two other patients received dasatinib due to imatinib intolerance. Two patients received nilotinib due to progressive disease who were on imatinib 600 mg. Two patients received homoharrington due to progressive disease (mutation analysis revealed mutation at T315I site).

In our study population, 298 patients were positive for BCR-ABL transcript as analyzed by qualitative real-time polymerase chain reaction (PCR) technique and 52 patients had Philadelphia chromosome positive by karyotyping technique, as a marker for CML.

Clinical outcome

Among the total number of 350 patients, 207 (59.1%) patients achieved complete clinical and hematological response at 3 months, 245 (70.0%) of patients achieved complete clinical and hematological response at 6 months, 277 (79.1%) of patients achieved complete clinical and hematological response at 12 months and 142 (40.5%) patients achieved major molecular response at 6 months.182 (52.0%) of patients achieved major molecular response (by quantitative PCR) at 12 months 72 (20.5%) of patients did not achieve major molecular response (by quantitative PCR) at 12 months.

Three patients became pregnant during the treatment of imatinib. However, all three tolerated pregnancy well. No adverse outcome noted at the time of delivery. No congenital anomalies were detected in the babies.

A total of 274 (78%) patients are on regular follow-up, 31 (8.8%) patients lost follow-up after 1 year.45 (12.8%) patients died and among these 32 died during blast crisis and 13 died during accelerated phase.

CONCLUSION

In our patient population, imatinib was a well-tolerated drug, however, 9% of patients required decrease in the dosage due to persistent myelosuppression affecting quality-of-life and requiring medical intervention. Small percentage of patients develop loss of response to imatinib after some time, especially high risk cases.[3,4] The mortality in the high risk group patients is high and newer tyrosine kinase inhibitors are effective, but due to cost restraints are not affordable by everyone. Contrary to the reported literature.[5] We did not see any adverse effect of imatinib on the pregnancy and the fetus. There were no congenital abnormalities reported in the babies born to mother on imatinib. However, number is small and patient counseling is important in this aspect.

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