Retrospective analysis of allele specific oligonucleotide–polymerase chain reaction (ASO-PCR), as method for detection of three BCR-ABL kinase domain mutations (T315I, M351T and F311L) in chronic myelogenous leukemia (CML) patients treated with imatinib mesylate (TKI)

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ASO-PCR is very rapid, cheap and sensitive technique for detection of KD mutations M351T, F317L, and F311C ABL mutation and is more sensitive than mutation detection by sequencing. Highly resistant clones may pre-exist and emerge rapidly. ASO-PCR has high sensitivity in detecting pre-existing mutation, which in our retrospective analysis seems true. Retrospective analysis of 50 patients of imatinib resistance was done in GCRI, from January 2014 till May 2014. Response to Imatinib was defined according to European leukemia net 2009 (ELN) criteria. Allele specific oligonucleotide–polymerase chain reaction (ASO-PCR) was performed on genomic DNA, extracted from peripheral blood mononuclear cells (PBMCs). Average age was 40.75 years, 33 were males and 17 females. 47 (94%) were in chronic phase, 2 (4%) in accelerated phase, 1 (2%) in blast crisis. 29/50 were having low EUTOS score, whereas SOKAL score was low in 20, intermediate in 21 while only 9 had high SOKAL at presentation. Median duration of Imatinib was 48 months. 43/50 had one or more than 1 mutation. T315I mutation was in 5 (10%) patients. M351T was in 32% (16/50), F311L in 8 patients. These mutations were speculatively pre-existing and were selected by standard dose Imatinib continued for median 4 years; detection of pre-existing mutation is not the current recommendation. We report low cytogenetic response (25%) and durability of response to 600 mg of Imatinib, even in M351T mutation, after 400 mg of Imatinib for median period of 2 years.

Biography

Mukul Arvind Gharote has completed his DM (Doctorate in Medicine) in Medical Oncology from Gujarat University. He is Consultant of Hemato-Oncology in various reputed hospitals; Neptune 1 Superspeciality Hospital Nashik, Western Maharashtra and Six Sigma Hospital in Western India. He has published 4 papers in reputed journals. He is a Co-investigator in 4 clinical trials in GCRI.

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