Online journal ISSN - 1676-5680
GMR Genetics and Molecular Research
EVOLUTION AND TECHNOLOGY

Analysis and comparison of clinicohematological parameters and molecular and cytogenetic response of two *Bcr/Abl* fusion transcripts

S. Polampalli[1], A. Choughule[2], N. Negi[1], S. Shinde[2], C. Baisane[3], P. Amre[3], P.G. Subramanian[2], S. Gujral[2], K. Prabhash[1] and P. Parikh[1]

[1]Molecular Biology Laboratory, Department of Medical Oncology, Tata Memorial Hospital, Mumbai, India
[2]Molecular Biology Laboratory, Department of Hematopathology, Tata Memorial Hospital, Mumbai, India
[3]Cancer Cytogenetics Laboratory, Tata Memorial Hospital, Mumbai, India

Corresponding author: S. Polampalli
E-mail: drsunitap@yahoo.co.in

Genet. Mol. Res. 7 (4): 1138-1149 (2008)
Received June 23, 2008
Accepted August 18, 2008
Published October 21, 2008

ABSTRACT. Different forms of *p210* are produced by alternative splicing, namely *b2a2* and *b3a2*. There have been many contrasting data establishing a relationship between the two *Bcr/Abl* transcripts and platelet counts and also response to treatment. However, the data published to date have been on a small group of patients. The aim of the present study was to determine whether there was any difference between clinical and hematological parameters at diagnosis between the two *Bcr/Abl* fusion transcripts in our population, and whether the two transcripts responded differently or similarly to imatinib treatment. RT-PCR was performed in 202 cases for detection of *Bcr/Abl* transcripts in newly diagnosed chronic myelogenous leukemia cases in one year. The two transcripts were compared and correlated with clinical, hematological and FISH data and with response to treatment. A total of 138 cases were of *b3a2* and 64 were of *b2a2* transcript. There was no correlation between the hemato-

logical parameters and the type of transcript. There was a significant association of blast crisis with *b2a2*, especially with myeloid blast crisis. When compared to FISH results, 10% of *b3a2* were found to have a significant association with 5'*Abl* deletion as compared to 3% of *b2a2*. On analyzing the therapeutic response, we did not find any difference between the two transcripts. In conclusion, our findings confirm that the *b3a2* type transcript is not significantly associated with thrombocytosis, that the short transcript, *b2a2*, occurs with acute phase, i.e., blast crisis, and that there is no difference in treatment response between the two transcripts. However, further studies are required to understand the molecular pathways involved in the *Bcr/Abl* mechanism.

Key words: *Bcr/Abl* fusion transcripts; *b3a2*; *b2a2*; Thrombocytosis; Molecular response

