



Multidrug resistance gene (*MDR1*) polymorphisms may not be directly associated with response to imatinib in chronic myeloid leukemia

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Genet. Mol. Res. 14 (4): 14967-14978 (2015)

Received April 14, 2015

Accepted July 14, 2015

Published November 24, 2015

DOI <http://dx.doi.org/10.4238/2015.November.24.4>

ABSTRACT. Our study aimed to investigate the association between multidrug resistance (*MDR1*) gene polymorphisms and the response to imatinib (IM) in chronic myeloid leukemia (CML). An electronic databases in PubMed, Cochrane Library, Wanfang, China National Knowledge Infrastructure, and VIP were searched using combinations of keywords relating to *MDR1* polymorphisms and the response to IM in CML. Studies retrieved from database searches were screened using stringent inclusion and exclusion criteria. The Comprehensive Meta-analysis 2.0 software was utilized for all statistical analyses. In total, 186 studies were initially retrieved, and 10 studies, involving 987 CML patients, were eventually included in this meta-analysis. Results of our study revealed no significant associations between *MDR1* rs1045642, rs1128503, and rs2032582 polymorphisms and major molecular response and complete molecular

response in CML patients. Significant differences were observed in the genotype frequencies of *MDR1* rs1128503 under homozygous, heterozygous, and recessive models, between CML patients sensitive and resistant to IM. A significant difference in genotype frequencies of *MDR1* rs2032582 was also observed under allele, homozygous, heterozygous, and recessive models between CML patients sensitive and resistant to IM. In conclusion, based on our meta-analysis, the *MDR1* polymorphisms, rs1045642, rs1128503, and rs2032582, are not directly correlated with the curative effect of IM treatment of CML patients.

Key words: Chronic myeloid leukemia; Multidrug resistance gene; Imatinib; Polymorphisms; Major molecular response; Complete molecular response