

Genetic variability of CYP2B6 G516T and their impact in efavirenz based HAART: A meta-analysis

Anwar Mulugeta

Addis Ababa University, Ethiopia

The non-nucleoside reverse transcriptase inhibitor, efavirenz is recommended as part of first-line therapy in HIV-infected patients and prescribed at a standard dose of 600 mg once daily. EFV is extensively metabolized primarily by hepatic CYP2B6 with partial involvement of CYP3A4 and CYP2A6. The aim of the study was to assess CYP 2B6 G516T polymorphism and their impact in efavirenz based therapy. A computerized literature search was conducted using the Medline, PubMed, and HighWire. Statistical analysis was conducted using comprehensive Meta analysis version 2 software. From fifty four articles only twenty two articles were included in the study based on the inclusion criteria. The average frequency of CYP 2B6 G516T polymorphism, from forest plot of 7 studies, was around 30% which strengthened the idea of substantial number of this polymorphism. Most of the studies had high proportion of mutant allele and the average of the all is around 49%. The mean plasma efavirenz concentration among 516GG, 516 GT and 516 TT holders was 2.869 ± 0.294 $\mu\text{g/ml}$, 3.464 ± 0.276 $\mu\text{g/ml}$ and 9.659 ± 1.262 $\mu\text{g/ml}$, respectively and it has significant association with genetic polymorphism of CYP 2B6 G516T. The most common type of CYP 2B6 polymorphism is CYP 2B6 G516T that have significant association with plasma efavirenz concentration. Having genetic test before drug starting is promising in HIV therapy to decrease side effects and to have better treatment outcome.

Biography

Anwar Mulugeta got his first degree in Pharmacy and second degree in Medical Pharmacology from Jimma University and Addis Ababa university of Ethiopia, respectively. Currently working in Addis Ababa University as clinical trial coordinators in project called "Folate Project" which is undertaken by Department of Psychiatry of Addis Ababa University in collaboration with Massachusetts General Hospital, USA. He also has four year working experience as Lecturer and researcher in Mekelle University, Department of Pharmacy. Regarding publication and conference, he has two publications in international journal and participated in national and international conferences like World Congress on Public Health.