Effectiveness of Second-Line and Third-Line Antiretroviral Therapy with and without Etravirine in Treatment-Experienced HIV-Infected Patients

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Background: Etravirine (ETR) is a second generation non-nucleoside reverse transcriptase inhibitors (NNRTI) for treatment of HIV infection. ETR can be used for treatment in patients with virological failure and acquired first generation NNRTI resistance associated mutations (RAMs), but not ETR RAMs.

Objective: This study aimed to examine effectiveness of ETR in second-line and third-line antiretroviral therapy (ART).

Methods: A retrospective cohort study was analyzed including HIV-infected patients with follow-up at least 6 months after receiving second-line or third-line ART. Patients were categorized into two groups: ETR group (ART with ETR) and control group (ART without ETR). Primary endpoint was proportion of patients with undetectable HIV RNA (< 50 copies/mL) at 6 months after initiation of second-line or third-line ART regimens.

Results: There were 39 patients (17 in ETR group and 12 in control group). Mean age was 43.5 years and 59% were male. Median duration of HIV infection was 6.8 years. Mean CD4 cell count at diagnosis was 126cells/mm³. Of 39 patients, 26 received the second-line regimens and 13 were on third-line regimens. Prior to the starting of second-line or third-line regimens, the mean CD4 cell count was 225cells/mm³. Median HIV RNA was 7310 copies/mL. All patients had multi-class HIV drug resistance and they were followed for 24 months after starting the second-line or the third-line regimens. No patients died and one patient lost to follow up. At 6, 12, 18 and 24 months of the second-line or the third-line regimens, approximately 63.3%, 82.1%, 85.0% and 82.8% of the patients achieved undetectable HIV RNA. Mean change of CD4 cell count was +94, +158, +194 and +247cells/mm³ at corresponding periods. There were no significant differences on proportion of patients with undetectable HIV RNA and mean change of CD4 cell count between the ETR group and the control group (all p > 0.05).

Conclusion: Virologic suppression and recovery of CD4 cell count are demonstrated in HIV-infected patients receiving second-line and third-line ART. ETR, as part of the regimen, is an effective option for HIV-infected patients with first-line or second-line ART failure and multiclass ART resistance development. However, the benefit of regimens with ETR over those without ETR cannot be demonstrated. Further studies with larger population are required.

Keywords: Etravirine, HIV, Antiretroviral Therapy, Second-line, Third-line, Effectiveness