Rilpivirine-based Antiretroviral Regimens for HIV Occupational Post-exposure Prophylaxis: A Multicenter Study

Tanapat Jongpaiboonpatana1 Atibordee Meesin2 Surasak Wiboonchutikul3 Somnuek Sungkanuparph4 Angthana Phuphuakrat1

1Department of Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok 10400, Thailand, 2Department of Medicine, Faculty of Medicine, Khon Kaen University, Khon Kaen 40000, Thailand, 3Bamrasnaradura Infectious Disease Institute, Department of Disease Control, Ministry of Public Health, Nonthaburi 11000, Thailand, 4Chakri Naruebodindra Medical Institute, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Samutprakan 10400, Thailand

Background: Completion of human immunodeficiency virus (HIV) occupational post-exposure prophylaxis (oPEP) is an important step of a successful prophylaxis. Current Thai National Guidelines recommended tenofovir/emtricitabine/rilpivirine (TDF/FTC/RPV) as one of the preferred regimens for oPEP.

Objective: We aimed to study the completion of 4-week regimen of RPV-based oPEP regimen compared with other standard regimens among healthcare workers (HCWs).

Methods: A retrospective multicenter cohort study was conducted among HCWs accidentally exposed to blood, body fluids or suspicious specimens of patients at Ramathibodi Hospital, Srinagarind Hospital and Bamrasnaradura Infectious Disease Institute, Thailand, between January 2015 and November 2017. Baseline demographic data, description of HIV exposure events, HIV serological status of source patients, and completion of the 4-week course of oPEP regimens were collected. Logistic regression analysis was used to determine factors associated with non-completion of oPEP.

Results: A total of 191 exposure episodes were reported. The median (interquartile range) age of HCWs was 27 (24-32) years, and 137 (71.7%) were female. Nurses (33.5%) were exposed most frequently. Most exposure episode occurred in inpatient wards (44.4%), and the most common type of exposure was percutaneous injuries (68.6%). HIV status of the source patients was defined in 139 episodes (72.3%), and 68 (48.9%) of these were positive. RPV-based oPEPs were prescribed in 135 episodes (70.7%). Other oPEPs included 22 (11.5%) raltegravir-based, 21 (11.0%) protease inhibitor-based, 1 (0.5%) efavirenz-based, and 12 (6.6%) other combinations. None of the HCWs were documented to have HIV seroconversion. 119 of 174 HCWs (31.6%) reported adverse events. The most common adverse event was dizziness (12.1%), followed by nausea/vomiting (5.8%). Comparing to other regimens, RPV-based oPEP was associated with dizziness more than other regimens (15.2% vs 4.1%, p=0.043). After exclusion of HIV-negative source, 89 of 116 HCWs (76.7%) completed the 4-week regimen. Multivariate analysis showed that RPV-based oPEP and unknown HIV status of source (OR 3.2, 95% CI 1.1-9.2; p=0.027) were significantly associated with non-completion of the 4-week course.

Conclusion: RPV-based oPEP is associated with lower completion rate of the 4-week regimen in HCWs. Prospective study should be performed to confirm these findings.

Keywords: HIV, Occupational post-exposure prophylaxis, Rilpivirine