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Genetic diversity of HIV-1 and transmitted drug resistance among newly diagnosed individuals with HIV infection in Eastern China

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Statement of the Problem: HIV transmitted drug resistance (TDR) can compromise antiretroviral therapy (ART), especially where ART has been scaled up, like China. Wuxi is a high economy region in eastern China, adjacent to Shanghai. Although the prevalence of HIV-1 infections is rising, little is known on TDR among newly diagnosed individuals in Wuxi. The aim of this study was to characterize the HIV-1 genotypes and TDR mutations among treatment-naïve HIV-infected individuals in Wuxi, China.

Methodology & Theoretical Orientation: The *pol* fragment containing the entire protease and the first 300 codons of the reverse transcriptase gene was amplified by nested PCR. Genotypic DR and phylogenetic analyses were performed on the 139 obtained sequences which were successfully amplified from 174 individuals.

Findings: Multiple genotypes were identified, including CRF01_AE (43.2%), CRF07_BC (24.5%), CRF67_01B (8.6%), CRF08_BC (7.9%), subtype B (5.8%), BC (1.4%) and 59_01B (0.7%). 19 individuals (13.7%) were detected with various levels of drug resistance degree, including two high-level degree individuals, one medium-level degree individual and sixteen low-level degree individuals. A total 3.6% of the subjects were found to be infected with HIV-1 variants with surveillance drug-resistant mutations (SDRMs) according to the world health organization (WHO) list.

Conclusion & Significance: The prevalence of CRF67_01B (8.6%) in Wuxi was higher than other cities in Jiangsu province. Although TDR in Wuxi was in low level, there were still other major resistance mutations being detected, like V179E, V179D, K103Q and E138A, which are not in the WHO list. High HIV-1 diversity has been found in Wuxi, indicating possible transmission of anti-retroviral drug resistance mutations. Therefore, continued molecular monitoring and epidemiological surveillance are imperative.

Biography

Yueqi Yin is a PhD student major in Epidemiology and Biostatistics in Southeast University. Her research focuses on HIV-1 transmission and phylogenetic analysis, especially among young people. Till now, one article about HIV-1 drug resistance mutations meta-analysis in Chinese has been accepted and another article is under review. Wuxi and other cities in Jiangsu province were her main study settings and the content in this abstract is part of her research.

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