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[PL4.3] THE PLACE OF DRUG RESISTANCE TESTING IN THE CLINICAL MANAGEMENT OF HIV

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PURPOSE OF THE STUDY: In most European countries, drug resistance testing has become part of routine clinical management of HIV infection, particularly at the time of antiretroviral therapy failure. Genotypic testing is performed most frequently because of its relatively low cost, technical convenience and virological benefit shown in clinical trials. Knowledge of the effect of different mutations on drug-susceptibility and/or the use of an interpretation algorithm may give a clinician an indication of which drugs to avoid. However, a resistance test remains a snapshot of the current situation, which does not necessarily reflect all relevant mutations that have been selected in the past. Therefore, additional information such as treatment history, dosing, the patterns of viral suppression under previous regimens, prior resistance tests, toxicity, and drug levels should be taken into account before therapy is changed. In addition, the resistance snapshot does not give direct insight into the possible future evolution of the virus and its drug susceptibility. Knowledge on evolutionary pathways would enable the “genetic barrier” of the antiretroviral regimen to be estimated and might facilitate selection of a regimen that would be more successful in the long-term.

For therapy-naïve individuals, resistance testing is recommended in Europe in case of acute infection, and in case of chronic infection depending on the overall prevalence of transmitted drug-resistant HIV. The prevalence is influenced by a number of factors, such as the proportion of HIV-infected individuals on suppressive therapy, the rate of resistance in the HIV-infected population, and the transmissibility and fitness of resistant viruses. Although preliminary studies have shown that transmitted resistance can persist for a long time after infection, clinical practice has shown that less extensive mutational patterns can revert over time. In the prospective HIV drug resistance surveillance programme SPREAD, supported by the European Commission, the majority of individuals infected with drug-resistant HIV carried virus with only one resistance-related mutation. In the future, more sensitive technologies might

be able to detect minority species with more extensive resistance in these patients. Pending these techniques it is of utmost importance to preserve plasma for genotypic resistance testing as soon as possible after HIV diagnosis.

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