Impact of lopinavir/ritonavir use on antiretroviral resistance in recent clinical practice

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Résumé en anglais	Objectives This observational study was requested by French health authorities to determine the impact of lopinavir/ritonavir (Kaletra®) on antiretroviral resistance in clinical practice. Virological failures of lopinavir/ritonavir and their effects on the resistance to protease inhibitors and reverse transcriptase inhibitors were evaluated in protease inhibitor-experienced patients.Patients and methods Virological failure was defined as an HIV-1 plasma viral load >50 copies/mL after at least 3 months of lopinavir/ritonavir-containing antiretroviral therapy. For all patients, a resistance genotypic test was available at failure and before lopinavir/ritonavir treatment. Data from 72 patients with inclusion criteria were studied. Results The mean viral load at baseline was 4 log10 copies/mL (1.6–6.5). Mutations in the protease gene significantly selected between baseline and failure were L10V, K20R, L33F, M36I, I47V, I54V, A71V and I85V ($P < 0.05$). Patients who had more than seven protease inhibitor mutations at baseline showed a significantly increased risk of occurrence of protease inhibitor mutations. The proportion of viruses susceptible to atazanavir, fosamprenavir and darunavir decreased significantly between baseline and failure ($P < 0.05$). Among patients with a virus susceptible to atazanavir at day 0, 26% (n = 14) exhibited a virus resistant or possibly resistant at the time of failure. This proportion was 32% (n = 16) for fosamprenavir and 16% (n = 7) for darunavir. Conclusions A darunavir-based regimen appears to be a sequential option in the case of lopinavir/ritonavir failure. To compare and determine the best treatment sequencing, similar studies should be performed for darunavir/ritonavir and atazanavir/ritonavir.
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