Emergence of acquired HIV-1 drug resistance has almost been stopped in Switzerland - a 15 year prospective cohort analysis

Alexandra U Scherrer, Viktor Von Wyl, Wan-Lin Yang, Roger Kouyos, Jürg Böni, Sabine Yerly, Thomas Klimkait, Vincent Aubert, Matthias Cavassini, Manuel Battegay, Hansjakob Furrer, Alexandra Calmy, Pietro Vernazza, Enos Bernasconi, Huldrych F Günthard &

BACKGROUND

Drug resistance is a major barrier to successful antiretroviral treatment (ART). Therefore, it is important to monitor time trends at a population level.

METHODS

We included 11,084 ART-experienced patients from the Swiss HIV Cohort Study (SHCS) between 1999 and 2013. The SHCS is highly representative and includes 72% of patients receiving ART in Switzerland. Drug resistance was defined as the presence of at least one major mutation in a genotypic resistance test. To estimate the prevalence of drug resistance, data for patients with no resistance test was imputed based on patient’s risk of harboring drug resistant viruses.

RESULTS

The emergence of new drug resistance mutations declined dramatically from 401 to 23 patients between 1999 and 2013. The upper estimated prevalence limit of drug resistance among ART-experienced patients decreased from 57.0% in 1999 to 37.1% in 2013. The prevalence of three-class resistance decreased from 9.0% to 4.4% and was always <0.4% for patients who initiated ART after 2006. Most patients actively participating in the SHCS in 2013 with drug resistant viruses initiated ART before 1999 (59.8%). Nevertheless, in 2013, 94.5% of patients who initiated ART before 1999 had good remaining treatment options based on Stanford algorithm.

CONCLUSION

HIV-1 drug resistance among ART-experienced patients in Switzerland is a well-controlled relic from the pre-combination ART era. Emergence of drug resistance can be virtually stopped with new potent therapies and close monitoring.
type: journal paper/review (English)
date of publishing: 8-3-2016
journal title: Clin Infect Dis
ISSN electronic: 1537-6591