Reviewer's report

Title: Transmission of HIV Infection from an Elite Controller to a Patient who Progressed to AIDS: a case report

Version: 1 Date: 15 December 2011

Reviewer: Hauke Walter

Which of the following best describes what type of case report this is?: New associations or variations in disease processes

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: Yes

Is this case worth reporting?: Yes

Is the case report persuasive?: No

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: No

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

Review for the manuscript: Transmission of HIV Infection from an Elite Controller to a Patient who Progressed to AIDS: a case report

General comments:

The manuscript of Killian et al. focuses on the transmission of HIV-1 from an asymptomatic and aviremic HIV-1-infected individual to his wife. This topic is highly interesting to the community, in particular because there is a widespread of opinions how to sexually behave in the absence of viremia (either due to antiretroviral therapy or as an elite controller).

Revisions necessary for publication:

There are two minimal requirements to prove an chain of infection: identification
of the same infectious agent in all chain members and identification of the source and the recipients. The authors do not fulfil sufficiently these requirements. Therefore, the evidence for the event of the transmission from an elite controller to his wife is relatively low.

The authors should improve their findings about the homology of the viruses derived from the two individuals of the assumed infection chain. Instead of that, they argue that “only” 0.5% of the investigated HIV-1 C clade isolates have a comparable sequence homology to the potential source strain as detected for the virus of the source’s wife. 0.5% means that 1 of 200 clade C infected individuals exhibits the same homology like the assumed source. In addition, the homology of the potential source strain to the C clade reference is much higher, so that a contamination during nucleic acid extraction and PCR has to be excluded. The reviewer recommends to enlarge the length of sequences for comparisons or to compare less highly conserved regions (more differences to unrelated strains) and to perform phylogenetic analyses to show homology in an adequate way.

The major challenge, however, is that the direction of infection cannot be shown if there is no data presented about the time of primary infection or seroconversion. Therefore, it cannot be excluded that FF is lying about her sexual history and was infected by a third person and consecutively has infected MM herself. This problem can only be solved, if data about the seroconversion of both infected individuals is available.

Minor comments:
Please refer to HIV-1 instead of HIV.
Introduction: Please specify how long elite controller at least must have undetectable viral load and be asymptomatic to fulfil elite controller criteria having been used in the paper.
Results: What is the reason to report about the neutralization capacity of MM’s serum? The paper is not addressing the topic of potential reasons for MM’s elite controller status. So skip the phrase.

Quality of written English: Acceptable

Declaration of competing interests:

I declare that I have no competing interests.