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: 2 December 2011

Reviewer: Klaus Korn

Which of the following best describes what type of case report this is?: An unexpected event in the course of observing or treating a patient

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?: No

Is the anonymity of the patient protected?: Yes

Comments to authors:

This is an interesting case report. However, the key message (HIV-1 transmission is possible from an elite controller with undetectable viral load) is not as definite as it may seem. I think that some additional information is necessary and that more caution in the interpretation is warranted since the conclusion depends in large part on the self-reported sexual history of only one partner.

Information missing:
- Is the age (31 years) of both partners the age at diagnosis (i.e. in 2001) or the current age?
- At what time point were the samples for sequence analysis obtained?
The major issue that needs to be clarified in my opinion is the following:

- Was the male partner also interviewed about his sexual history? The manuscript only states that he "gave no history of any infectious diseases" and only "surgery 3 years previously for treatment of an abdominal gunshot wound" is reported as a potential transmission route. If a sexual history was not obtained this has to be clearly stated because it weakens the argument of transmission during the aviremic phase. I would assume that he did have sexual contacts before, which are at least as likely to pose him at risk of HIV-1 infection as the surgery is. Another question is if he did require blood transfusion during surgery, because without this, transmission of HIV via this event is very unlikely. Thus, the surgery is clearly not the only possibility for him to have acquired HIV infection, and he may well have transmitted the infection to FF during acute infection acquired much less than the 3 years before when he had surgery.

- How was sequencing accomplished in the male partner when "On at least eight separate occasions spanning this 10 year period, MM tested negative for HIV DNA by PCR."? What was different in the PCR method used to amplify for sequencing from the PCR method used in detection? The only difference I could notice is that for sequencing "total nucleic acids (both DNA and RNA)" were extracted, whereas for the detection attempts probably only DNA was extracted.

- A final issue I want to raise is about the sequence comparisons to determine the relationship of the sequences from MM and FF. Wouldn’t it have been possible to do a phylogenetic analysis even with those short sequence fragments? Although from a conserved region, the heterogeneity of the sequences used is quite substantial. Furthermore, the distance from other sequences may have been overestimated in the analysis shown here using only sequences from a sequence database. If one would also include local sequences from the same area, the relationship of the sequences of MM and FF might not be as unique as it is presented here.

Quality of written English: Acceptable

Declaration of competing interests:

'I declare that I have no competing interests'