Reviewer's report

Title: Estimates of the duration of the early and late stage of gambiense sleeping sickness

Version: 1 Date: 12 November 2007

Reviewer: BISSER SYLVIE

Reviewer's report:

General

The question addressed by the authors is rarely addressed especially not in the last decades and important for control programs aiming to eliminate the disease in endemic countries. The statistical approach used seems adequate thus complicated for a non specialist. Interestingly, it corroborates with clinical findings from the beginning of the 20th century (the time where large clinical studies could be done in the colonial period) and thus strengthen the reality of these results. However, the potential impact of these findings is not well discussed and does not support the last sentence of the conclusion “….and will facilitate the evaluation of different possible control strategies”.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

There is a huge amount of data on patients, this kind of data are rarely available thus strengthening the importance of this study. Some corrections or improvement have to be brought to the tables in order to better understand the meaning.

P8 : 7742 patients but only 6663 eligible, thus 1079 subjects have not been treated although they were real patients ? Could that be explained or discussed a bit more ?

Table 1 :
Kiri, S Soudan : correspond to “Kajo Keji” ? that has to be uniform in the text and the tables

Number with WBC in CSF : incomprehensible for me in the text and the table. Per definition, stage 1 patients have less than 5 cells which means 0 or 1 or 2 or 3 or 4, there should be no difference between a patient with 0 cells and a few cells. I suggest to discard this line or if the authors want to discuss definition or change the established threshold in neurology, they have to discuss it and support it with references. Also, p10 “a greater proportion had WBC in their CSF” should be either discarded or explained differently.

The different % of subjects seen at 3,6,9,12 : this data include patients seen several times, it would be interestsint to have either in the text or in the table the
number of subjects who attend controls 2, 3 or 4 times to clarify.
Median-person-days of observation among patients seen at least once (IQR): that line should be abbreviated with a note to improve the design of the table.

The statistical differences among groups are only briefly presented in the text p 8, they should be annotated in the table so that the reader can directly identify them.

Table 2:
Median days to stage 2 diagnosis (IQR) : this line is not clear and it is not comprehensible why it is here. Either remove here and put in the text or add to figure 4 ?
Figures : verify concordance of the figure numbers in the legend to the text (always figure 1 in the text). Figure 4 : could it be possible to add to the legend the total number of visits that progressed to stage 2.

Overall, references are lacking especially for non specialized readers that would like to read more about HAT. Also, the author refers several times to his own manuscripts “in preparation” leaving this paper with few references. For example in the introduction they speak about trypano-tolerance which is effectively and important notion to introduce regarding their data (huge number of seropositive suspects that turn out to be self cured) but the authors then only refer to an oncoming paper in preparation without a sentence to synthesise the notion and/or a few references to already published work on that topic to help the reader to be interested in this important question.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
P7 : “Estimation of P1 and P2" : what are those abbreviation used for ? Not defined.
P8: “Stage 1 duration” : this chapter is long and the preliminary data that help to estimate r1 should be described in a different section/paragraph to facilitate comprehension
P13: point 3, I : this sentence needs to be reworded, not comprehensible (“trough” ?)
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Discretionary Revisions (which the author can choose to ignore)

They are a lot of possible bias that are well explained in the discussion section. A subheading on this subject (bias) in the discussion is not indicated and this should be reformulated differently.
**What next?:** Accept after minor essential revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interest's.