

Round #3

Decision

by Alison Duncan, 2018-10-05 09:16

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Decision for preprint Vantaux et al

All changes made in response to the recommender are highlighted in yellow in the revised version of the ms.

Before I recommend your Preprint please can you clarify the values of HBI used in your model for susceptible and sporozoite infected mosquitoes. See my comment below.

Lines 231 – 243: This paragraph is still not clear. Please see suggested corrections below.

The corrections suggested below have been made.

Lines 231 – 243 and 341 - 366: Also, there is some inconsistency with regards to the values of HBI used, and for which category of mosquito. Lines 238 – 239 indicate that the HBI of susceptible mosquitoes was based on the range of values obtained from the CI of oocyst infected mosquitoes. But the text in lines 345 – 346 states that the HBI of susceptible mosquitoes was fixed at 0.62, the mean value for susceptible and uninfected mosquitoes. ***This has now been corrected (line 345-350)***. This is repeated in the legend for Figure 4, ***This has now been corrected (line 364-365)*** and here it also states that ‘the ribbons represent the EIR values for different HBI of sporozoite-infected mosquitoes according to the CI of HBI in oocyst infected mosquitoes’. The response to Dr Ramiro in the first round of review states that the simulations were re-run using the minimum and maximum values of HBI CI of oocyst infected mosquitoes, for sporozoite infected mosquitoes. This is the clearest explanation of how the ribbon values were estimated.

Please state clearly the value(s) of HBI used for each category of mosquito. Also, why were the CI for oocyst infected mosquitoes used in the simulation and not sporozoite infected mosquitoes?

We wanted to fully quantify the impact of HBI changes of sporozoite infected mosquitoes. Therefore, we ran our simulations with values from 0 to 100% (x-axis of figure 4). Nevertheless, the average of the HBI measured in our work for sporozoite-infected mosquitoes is indicated in the corresponding figure by the dashed line. Concerning the different values of HBI used in the model: for susceptible mosquitoes we used the averaged value measured in the study (Table S1), whereas for the HBI of exposed mosquitoes we based it on the CI of oocyst-infected mosquitoes as these values ($63.6 \pm 5.7\%$) are encompassing

the values from the uninfected mosquitoes ($61.1 \pm 2.1\%$) and are not significantly different (see ms lines 282-285). Finally, using the CI allowed us to explore some variation around the mean as suggested in the first round of review. We have clarified all these points in the corresponding section (lines 345-350).

Lines 289 – 298: I think the abbreviation IC should be CI?

This has now been corrected (lines 289-298).

Lines 352 – 355: Maybe add to this sentence that it is the size of the increase in HBI for sporozoite infected mosquitoes that declines with increasing mosquito longevity?

We believe the recommender meant the increase in EIR declines with increasing mosquito longevity, we agree and have reworded this sentence accordingly see lines (356-358).

Line 134: in a Petri

This has now been corrected (line 134).

Line 231: 'are born'

This has now been corrected (line 231).

Line 234: populations die at rate. Nm is the

This has now been corrected (line 234).

Line 235: the probability.... and the HBI

This has now been corrected (line 235).

Line 236: Nm is the

This has now been corrected (line 236).

Line 237: equals

This has now been corrected (line 236).

Lines 238 – 239: on the confidence intervals of oocyst-infected mosquitoes that were experimentally....

This has now been corrected (line 238-239).

Line 240: the HBI

This has now been corrected (line 240).

Line 241: EIR)

This has now been corrected (line 241).

Line 247: remove 'similar'.

This has now been removed (line 247).

Line 329: the highest

This has now been corrected (line 329).

Line 361: susceptible mosquitoes

This has now been corrected (line 364).

Line 395: preferences to

This has now been corrected (line 399).

Line 397: inform

This has now been corrected (line 401).