
Round #2

Decision

by Alison Duncan, 2018-08-09 16:35

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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.

I agree with both reviewers that your manuscript is nearly suitable for Recommendation by PCI Evolutionary Biology following some minor corrections. The quality of the Figures needs to be improved, especially Figure 4 and the text for the equations is very blurred. Please also respond to my comments and those of Reviewer 1.

The quality of the Figures and the text for the equations have now been improved.

Lines 141 – 143: state here that you test for parity to control for age.

This has now been added (line 142).

Line 199: did you check for an effect of village on AI?

We did not check for an effect of village on AI as the sample sizes are highly unbalanced (13 vs 571 samples). The analyses were run again without the 13 samples and gave similar results.

Lines 234 – 239 and 253: the text for the equations is very blurred. Please check and replace.

The equations have now been checked and replaced.

Lines 245 -246: this sentence is unclear. Would ‘The infectious period of infectious humans (Ih) is equal to 1/ on average’ work.

The sentence has been modified (lines 236-237).

Lines 247 - 252: These sentences are also unclear. The explanation in the response to reviewer 1 and the figure legend is much clearer. Please can you re-word this section.

The section has been reworded (lines 236-251).

Figure 4 is blurred. Please can you increase its quality.

Figure 4 quality has now been increased.

There are still references missing from the discussion (now lines 297, 312, 315, 333, 345 – 346). I disagree that these topics are specific to the discussion of the results obtained. Please provide suitable references. For example, line 389 the effect of temperature on malaria development, line 400 mosquitoes relying on CO₂ and other odours for long-range host detection, line 416 the circadian rhythms of mosquito activity, lines 428 – 429: models that assume infected and uninfected mosquitoes have a similar preference for humans, lines 435 – 437: the duration of parasite and vector lifespans.

We have now added references to the different points (lines 382, 393-394, 396-397, 411, 423, 427-428, 432-433).

The ‘Epidemiological consequences’ paragraph in the Supplementary Materials is very difficult to follow.

This has now been reworded.

British and American English are used interchangeably throughout the manuscript, e.g. odour and odor, please choose one.

British English is now used throughout the manuscript.

Also, please can you correct the following typos.

Line 20: humans.

Line 22: preferences.

Line 40: responses.

Line 56: humans.

Line 57: chimpanzees, bonobos and gorillas).

Line 60: hosts.

Line 61: humans.

Line 62: humans.

Lines 70 and 80: in Burkina Faso, not of.

Line 88: chickens.

Line 110: the quantity.
Line 130: they were instead of it was.
Line 176: The head and thorax.... Line 188: was started by an initial.
Line 211: humans.
Line 216: two-ways.
Line 243: dies.
Line 246: parameters.
Line 248: the HBI.
Line 258: 'was' not 'has been'.
Line 284: humans.
Line 291: both their oocyst.
Line 307: hosts.
Line 311: hosts.
Line 323: humans.
Line 324: intervals.
Line 330: Figure 3.
Line 340: humans or humans and animals.
Line 341: intervals.
Line 365: represents.
Line 371: the mosquito to human.
Line 372: measured.
Line 386: humans.
Line 394: humans.
Line 402: moisture.
Line 403: host specific, and informing of
Line 404: engages.
Line 415: of rest.
Line 417: bed-nets.
Line 419: an increased.
Line 420: rhythms.
Line 421: periods.
Line 429: preferences.
Line 431: increases in infectious period can have a dramatic.
Line 439: taken.
Line 444: humans.

Supplementary materials.

Line 54: humans or human-animal mixed blood meals. Line 55: villages.
Line 56: intervals.
Line 17 dwellings.

We thank the recommender for the in-depth suggested corrections, all mentioned typos have now been corrected.

Reviews

Reviewed by Ricardo S. Ramiro, 2018-06-27 13:07

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

The authors carried a significant amount of work to improve the clarity of the manuscript and address my previous concerns. Just a few minor comments:

- line 243: "each mosquito population die at rate" should be "Mosquitoes die at rate" ?

This has been fixed (line 233-234).

- line 247-252: this section could be written more clearly

This has been reworded (lines 236-251).

- lines 294-301: It would just be good if the authors state here how often were there significant differences between sporozoite infected vs all other mosquitoes (e.g. in all randomisations or in a percentage of these?)

We thank Dr Ramiro for this suggestion. We now report at lines 289-298:

'The randomisation was repeated 100 times and the analysis confirmed a significantly higher anthropophagy in sporozoite-infected individuals compared to both oocyst-infected individuals and uninfected individuals in 100% of these randomisations (mean (X^2_2) = 12.7, IC (X^2_2) = (7.54-21.59), mean (P) = 0.0043, IC(P) = (0.00002-0.023); Tukey post-hoc tests: sporozoite-infected vs. oocyst-infected individuals, this pair-wise comparison was significantly different in 100 % of the randomisations: mean(P) = 0.02577, IC(P) = (0.02559-0.02591); sporozoite-infected vs. uninfected individuals, this pair-wise comparison was significantly different in 90% of the randomisations: mean (P) = 0.023, IC(P) = (5e-07 - 3e-01); oocyst-infected vs. uninfected individuals, this pair-wise comparison was significantly different in 0 % of the randomisations: mean (P) = 0.78, IC (P) = (0.07-0.99)).'

- line 313: should read: "Soumouso only human dwellings were..."

This has now been corrected (line 310).

Reviewed by Olivier Restif, 2018-06-27 13:08

I am satisfied with the revisions made by the authors. Apart from a few typos (e.g. lines 438-439), I believe this manuscript is of sufficient quality to be published.

The pointed typo was corrected and the overall ms was checked again for other typos.