Reviewer’s report

Title: Association of Panton Valentine Leukocidin (PVL) gene with methicillin resistant Staphylococcus aureus (MRSA) in Western Nepal: A matter of concern for community infections (A hospital based prospective study)

Version: 3
Date: 9 June 2015

Reviewer: Jean-Philippe Rasigade

Reviewer’s report:

The authors collected 139 MRSA isolates over a one-year period in outpatient and inpatients from a teaching hospital in Nepal. MRSA from environmental samples (n=7) were also included. AST and PCR-based detection of PVL genes were used to estimate the rates of association of PVL with the nosocomial status of the strain, the infection localization, and the MDR status (resistance >3 antimicrobial classes).

They report a high PVL prevalence in community-acquired MRSA, in strains from pus sample, and a negative association of PVL with MDR.

Data on PVL prevalence and MRSA in Nepal are scarce, the results are thus of interest. Methods are appropriate and conclusions are generally well supported by the data. However some work would be beneficial to improve the manuscript, hence my recommendation is Major Revision.

Major compulsory revision

The manuscript should be edited for correctness by a native English speaker (grammatical errors, tense inconsistencies etc).

The abstract line 5 states as an objective of the study to "check the reliability of PVL as a marker of CA-MRSA". This objective is interesting however the authors donnot fulfill it: there is no analysis of negative and positive predictive values. The authors should either perform these analyses (provided their sampling criteria are representative enough) or remove this objective.

Methods line 53. Inclusion criteria are too vague. Please specify if the study was prospective, restrospective, etc. Please also indicate the number of MSSA recovered over the same period to place the study in a broader context.

Results. P-values should be consistently provided for all comparisons (lines 99, 101, 106, 112).

Overall, discussion contains too many speculative statements regarding the biological or pathophysiological interpretations of the results. The discussion should be shortened and more focused on the epidemiological results in their precise study setting (in other words, discussion puts too much emphasis on
well-known associations of PVL with SSTI, CA-MRSA and non-MDR MRSA).

Previous results from Nepal (ref 26) should be discussed more deeply.

Minor essential revisions

PVL has 2 subunits: please write "PVL genes" throughout the text or specify the gene that was detected by PCR (either lukS-PV or lukF-PV)

Abstract line 8 please define "OT"

Abstract conclusions are too long as compared to results. It would be beneficial to give more precise results and shorten abstract conclusions.

Line 32 please italicize gene names.

Introduction line 44. An increasing number of studies have evidenced associations of PVL with pathogenesis since the cited references were published. Please cite more recent references.

Methods line 57. Please give a reference for the modified Kirky Bauer method.

Methods line 70. I believe the ethics statement should come here. Regarding ethics, please specify whether consent were obtained from patients if relevant.

Methods line 71. PCR is a standard acronym.

Methods line 73. Please use consistent format for citations.

Methods line 76. Please specify which PVL subunit is targeted by the primers.

Results. Table 2 is called before table 1.

Discussion line 118. Please change "Panton..." to "PVL".

Discussion line 128 and 148. It is unclear why the authors compare their methods and results with those of a prevalence study from Kenya.

Discussion line 162. The P-value should be given first in the Results section.

References: please verify formatting (presence of quotes etc). Ref 13, article title is incorrect.

Table 1 & 2: first column giving row numbers should be removed.

Figure 1. Please indicate the position of mecA and lukPV on the gel rather than only giving fragment length in legend.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

'I declare that I have no competing interests'