Reviewer's report

Title: Risk Factors for Recurrent Clostridium difficile Infection (CDI) Hospitalization Among Hospitalized Patients with an Initial CDI Episode: A Retrospective Cohort Study

Version: 2 Date: 23 March 2014

Reviewer: Lutz von Müller

Reviewer's report:

This is a retrospective single centre analysis of CDI detected between 2003 and 2009 with a specific focus on recurrent CDI. The authors discriminate patients with initial (iCDI) and recurrent (rCDI) C. difficile infection according to the recordings in the clinical databank.

Although the manuscript is well written and despite the high numbers of CDI infections recorded there are some major points which might be addressed to achieve the standard for publication.

1. The retrospective data provide limited information to substantially discriminate between initial and recurrent CDI; a structured questionnaire was not introduced to discriminate between initial and recurrent CDI. Therefore, in case of recurrent infections could have been misinterpreted as initial CDI if patients were treated for the first episode in one other hospital or at outpatient base. All cases of recurrent CDI treated later on in other hospitals or at outpatient base could not be identified by the current study design. This could be the reason why the rate of rCDI was twofold lower as compared to other studies.

2. Analysis of retrospective data was finished in 2009; however, there is no obvious reason why more actual were not included.

3. Due to these major limitations scientific novelty of this manuscript is missing and the results are pure descriptive.

Certainly, the quality of data is always limited in retrospective studies. However, despite these limitations retrospective data are important for longitudinal analysis due to availability of an extensive historical dataset. This information is of striking importance for clinical appearance of CDI in times of outbreaks with a new hypervirulent 027 ribotype outbreak strain.

Therefore I would recommend the authors to include also more actual data on CDI into analysis (e.g. end of 2013). This would allow to answer the question how the clinical appearance of CDI changed since 2003 and how the 027 epidemics was associated with recurrence rates. It would be of high clinical importance to obtain new independent data to confirm that the recurrent rates for CDI were increasing in recent years (e.g. Aslam et al. 2005).

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

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