Reviewer’s report

Title: Two cases of cardiac device-related endocarditis due to Streptococcus dysgalactiae subsp. equisimilis (group C or G streptococci)

Version: 2 Date: 16 January 2014

Reviewer: Baard Kittang

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Major Compulsory Revisions

1. The authors state, correctly that both patients had recurrent bacteraemia with S. Dysgalactiae subsp. Equisimilis (SDSE). However, the manuscript does not reveal information on how the microbiological diagnosis was achieved: Was the SDSE-diagnosis base on group carbohydrate specificity and colony morphology? Or genetic analyses (16S rRNA/sodA-sequencing)? Or other methods?

   The methods of species identification must be detailed. If an unequivocal identification has not been performed, it should be done if possible.

2. Recurrence is an interesting aspect of invasive SDSE-infections. However, molecular analyses that could give interesting information on whether the cases illustrated relapse or reinfection do not appear to have been performed. emm typing and PFGE of the isolates could provide such information, and from an epidemiological point of view it would be particularly interesting to know if certain emm types are involved in these rare infection. Based on these considerations, I think that at least emm typing of the isolates should be performed.

3. The ability to infect both endocardium and cardiac devices (and produce recurrence) are aspects of SDSE disease that demands a more thorough discussion in the text. Rhode and co-workers have done some elegant studies on these topics, which might partly provide a molecular explanation for these abilities (Rhode M et al Microbes and Infection 329-334 and Cellular Microbiology 450-468). The results from these should be discussed in the text.

Minor Essential Revisions

General comments:

a. Please avoid the use of abbreviations if a word is only used a couple of time. Please do not repeat a word in full-length if abbreviation already has been introduced.

b. Spell out single digit whole numbers (1-9) consistently throughout the text

c. Page and line numbers would ease the review process :-)

1. Abstract
   a. Background
      i. Check spelling of “background”
      ii. The word S. dysgalactiae subsp. equisimilis is repeated four times – please rephrase to increase fluency.
   b. Conclusion
      i. Please rephrase the first sentence: SDSE seldom cause cardiac device endocarditis, but it is generally speaking not a “very rare pathogen”

2. Background
   a. Pharyngitis / tonsillitis is of the most frequent non-invasive manifestations of SDSE disease, and should be mentioned.

3. Case presentation
   a. Case 1
      i. Page 3, line 4: Should read “In February”
      ii. Page 3, line 14: Should read: “…a normal haemoglobin level of… an elevated leucocyte count of… and an elevated C-reactive protein level of …”
   b. Case 2
      i. Page 3, line 25, 26: Should read: “…hypertension, paroxysmal atrial fibrillation and a prosthetic joint on the right side inserted in 2008”.
      ii. Page 3, line 27: Should read: “…in June 2012”.
      iii. Page 3, line 30: Should read; “…revealed S. dysgalactiae subsp. equisimilis bacteraemia…”
      iv. Page 3, line 31: What does “adequate medication” signify?
      v. Page 4, line 2: Should read: “…haemoglobin level of, an increased leucocyte count of……, and an increased C-reactive protein level of…”
      vi. Page 4, line 4: Should read: “…IU six times a day.”
      vii. Page 4, line 13: Should read: “…pericardial effusion”
      viii. Page 4, line 20: Should read: “…at four million IU six times a day and a 500 mg…”

4. Conclusion
   a. Page 5, line 3: Should read: “…coagulase-negative staphylococci (35 %), …”
   b. Page 5, line 6: Should read: “… bacteraemia occurs at high age”.
   c. Page 5, line 7: Please provide a reference for the statement on the increased use of pacemakers
d. Page 5, line 9: Should read: “These factors might contribute to the occurrence of rare and severe infections caused by this bacterium, such as endocarditis. “
e. Page 5, line 13: Should read: “…in the diagnostic process of suspected infective endocarditis.
f. Page 5, line 22: Please provide references on the statement on varying length of antibiotic treatment.
g. Page 5, line 24, 25: Should read: “…equisimilis is a pathogen that very rarely causes…. The two cases reported here…”

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

**Quality of written English:** Needs some language corrections before being published

**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