Reviewer's report

Title: Persistence survey of Toxic Shock Syndrome toxin-1 producing 
Staphylococcus aureus and serum antibodies to this superantigen in five groups 
of menstruating women

Version: 1 Date: 16 December 2009

Reviewer: Jan Willem Cohen Tervaert

Reviewer's report:

In the study by Parsonnet et al. the persistence of S. aureus colonization was 
determined in 311 subjects. Furthermore, serum antibody to TSST-1 was 
determined. Of those who had one positive culture for S. aureus, 35% were 
persistent carrier, whereas of those who had one TSST-1 positive culture, were 
41% carrier. TSST-1 S. aureus carriers were reported to have higher titres than 
other subjects.

Comments:

1. The authors compare their study with the study and a review by VandenBergh 
et al. (1999). However, the present study is clearly different, because subjects 
were selected based on the presence or absence of a positive S. aureus strain; 
therefore, carriage rates cannot be compared with cross-sectional studies.

2. From the literature, it is already clear that S. aureus is carried in the nares. 
Therefore, the study of anal or vaginal carriage does not seem to add much to 
the existing literature.

3. In the present study, carriers were classified as transient, intermittent or 
persistent. This classification is very arbitrarily. As was recently demonstrated, 
classification can be simplified into either persistent carrier or others (intermittent 
carriers and non-carriers) (see Van Balkom et al. 2009).

4. To identify whether TSST-1 positive strains interact with a person, one should 
determine T-cell expansions and not antibodies (see for instance Popa E. et al. 

5. The presence of risk factors for S. aureus carriage such as psoriasis, diabetes 
mellitus, Wegener’s granulomatosis, intravenous drug abuse, is not reported in 
the subjects that were induced in the current study.

6. The use of antibiotics before or during the study is not reported.

7. The purpose of the study of anti-TSST-1 antibodies is not clear. What do the 
authors want to demonstrate?

8. Unfortunately, data on antibody titres are not provided. Could a figure clarify 
findings?

9. During the observation period only one subject converted from 
antibody-negative to antibody-positive. In this subject TSST-1 positive S. aureus
strain was cultured. Whereas the authors claim that there were no TSS-like symptoms, it is also of interest whether this subject (and the other 4 who seroconverted before the start of the study) did have any other disease (bacterial and/or autoimmune).

10. In the discussion the effect of the vaginal environment for TSST-1 positive S. aureus carriage is only briefly discussed without citations. This part should be improved.

11. What was the intra- and inter-observer variation of obtaining vaginal and anal swabs for the presence of S. aureus?

12. What was the inter- and intra-observer variation for the antibody test?

13. Numbers in table 1 and table 2 are hard to compare. For instance, it is stated that in group 2 78 subjects were enrolled and 64 subjects completed the study, whereas in table 2 data of 61 subjects are reported.

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.