Reviewer’s report

Title: Prevalence, Virulence Factors and Antimicrobial Susceptibility of Enterococcus faecalis Isolates from Patients with Dental Diseases

Version: 1 Date: 4 January 2008

Reviewer: Johannes Huebner

Reviewer’s report:

This manuscript studied the prevalence of Enterococcus faecalis in oral washings from patients with and without various types of dental diseases. Subjects rinsed their mouth for 1 minute with 10 ml of sterile water and the samples were subsequently centrifuged, concentrated, and plated. While no E. faecalis could be isolated in 50 controls, a total of 8 E. faecalis and 2 E. avium could be isolated from 109 patients with dental diseases. The presence of several putative virulence factors was assessed genotypically and phenotypically indicating that 2/8 isolates produced hemolysin and 3/8 produced gelatinase. All isolates possessed the ace and efa genes while none was positive for esp and only 2 for cylA. All E. faecalis were susceptible to ampicillin and vancomycin.

This manuscript describes a concise study in a reasonably large cohort. The procedures used are described in detail and the methods for detecting the putative virulence traits are adequate.

Questions/Suggestions:

1. The authors refer to several times to “virulence genes” or “virulence factors”. However, for all the mechanisms studied there is so far no convincing evidence with regard to virulence and therefore a more careful wording (such as “putative virulence factors” or “fitness factors”) should be used.

2. The mouth rinse is probably not very sensitive and may actually underestimate the rate of carriers. Along this line of arguments, the difference between healthy controls and patients may be quantitative, i.e. higher colony counts in patients and lower numbers of bacteria under the limit of detection in healthy controls. While this finding by itself may be interesting, the authors should at least discuss this possibility.

3. Table 2 gives a very superficial overview of the demographics of the two study groups. One would like to see in addition the standard deviation of the age groups (they look quite different with a 10 year difference in age) and statistic tests regarding sex and smokers.

4. The susceptibility testing is somewhat redundant and the respective paragraphs should be shortened. It has been shown previously that in E. faecalis ampicillin is a surrogate marker for imipenem resistance (J Clin Microbiol. 2004 Aug;42(8):3747-51). Gentamicin resistance (except for high-level gentamicin resistance), clindamycin resistance, or oxacillin resistance are not clinically
relevant in enterococci.

5. There are several papers discussing the role of gelatinase in biofilm formation of enterococci. The authors should mention this possible link that may explain the presence of this gene in the observed context. The same is true for the reported association of biofilm formation and the esp gene.

6. Dr. Creti is not at the University "La Sapienza" but at the "Istituto Superiore di Sanità"