

10th AIO Pavia Dentistry Congress
26th-27th January 2007
Daina Centre, Nembro (Bergamo)

SANITISATION OF THE DENTISTRY ENVIRONMENT PART II

Vittorio Collesano, Guido Folegatti, Cristina Vigato, Francesco Gaglianone



University of Pavia, Faculty of Medicine and Surgery,
Specialised Degree Course in Dental Hygiene chaired by Professor V. Collesano

Abstract:

Research and development in the dental environment are evolving constantly, with the aim of improving the methods used currently for sanitising the work environment, both for the dental staff and

for the patients. Sani System Polti is a new surface sanitising system capable of lowering bacterial contamination caused by microorganisms of the Staphylococcus and Streptococcus genera.

Introduction

A new surface sanitising system has been developed with the aim of overcoming the limitations of conventional methods. It is called Sani System[®] (by Polti S.p.A., Bulgarograsso, Italy) and has the capabilities of eliminating microorganisms using steam as a “transport medium” for carrying heat and the sanitising agent.

Unlike wipes, steam is able to penetrate everywhere, even into the narrowest spaces which cannot be reached by disinfectants. This is an enormous advantage since it offers the certainty of total disinfection.

Sani System[®] upgrades the action of the saturated high-temperature steam (180°C), thanks to the use of a sanitising agent called HPMed. In this way, steam becomes the ideal medium for conveying the high temperature and the sanitising agent.

The saturated steam generated by Sani System[®] dries spontaneously within 30 seconds to one minute, without leaving any traces. Conventional sprayers can take several minutes to act after application and then need to be dried with cloths.

Research

Sani System[®] was used in the Denture, Gnathology and Oral Hygiene Unit of the Department of Odonostomatological Disciplines of Pavia University, care of the IRCCS San Matteo Hospital in Pavia, and microbiological tests were carried out by the Department of Morphological, Eidological and Clinical Sciences of the same University.

The results of the tests are shown below.

Sampling method

30 environmental samples were taken for quantitative and qualitative microbiological testing. The samples were taken from two different workstations immediately after stomatological activity.

Each workstation was sampled before (5 samples) and after (5 more samples) the sanitising treatment, and was subjected to different decontamination treatments:

- Steam only;
- HPMed.

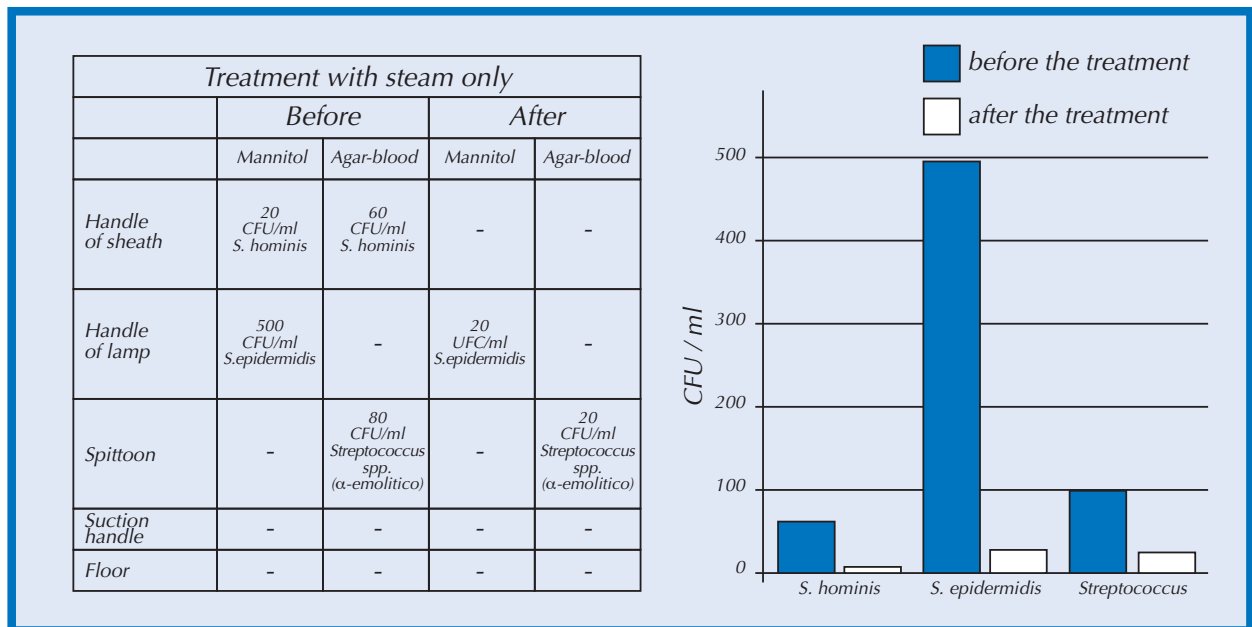


Figure 1: Bacteriological testing of the dental unit treated with steam only.

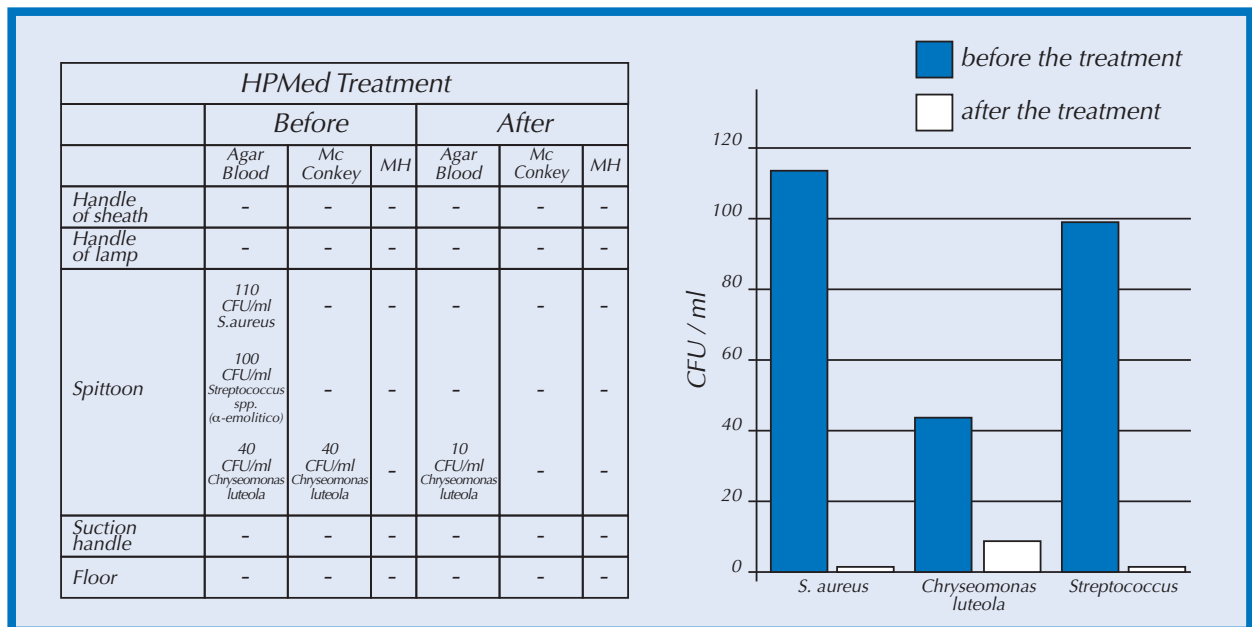


Figure 2: Bacteriological testing of the dental unit treated with HPMed.

Bacteriological testing

The bacteriological tests showed a significant drop in the bacterial load following treatment of the dental unit with steam only (**Figure 1**), and again an even more marked reduction following treatment with HPMed (**Figure 2**). The bacterial load measurements, expressed in CFU/ml, are shown in the relevant tables and charts.

Mycological tests

The cultures and microscopic examinations did not reveal the presence of any unicellular and/or filamentous fungal colonies.

Conclusions:

Based on the results obtained following the sampling carried out at the Department of Odontostomatological Diseases of Pavia University, care of the San Matteo Hospital, it was possible to observe that treatment with HPMed (**Figure 2**) was more effective than treatment with steam only (**Figure 1**). On analysing **Figure 1**, it can be seen that steam does not lower the bacterial load completely when

it is particularly high and consists of Staphylococci and Streptococci.

In the presence of HPMed, the bacterial load is eliminated for Staphylococci and Streptococci, while it appears that although the load of environmental germs such as *Chryseomonas luteola* is lowered it is not eliminated completely.