Reviewer's report

Title: Hygienic safety of reusable tap water filters (Germlyser(R)) with operating time of 4 respectively 8 weeks in a haematological oncology transplantation unit

Version: 1 Date: 16 April 2007
Reviewer: Kevin G Kerr

Reviewer's report:

General

There is increasing evidence that hospital water supplies are a source of bacteria and fungi for infections in immunosuppressed and debilitated patients. New interventions, such as water filtration, are needed if this route of infection is to be curtailed. This paper makes a contribution to this topic by examining the microbiological efficacy of re-usable point-of-use filters. The authors report on their experience with three types of such filters over varying time periods and conclude that some filter types can be used for up to eight weeks.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

My principal concern about this manuscript is that it is confusing for the reader. The authors are describing experiments with three types of filter over differing time periods for a range of microorganisms at different temperatures of incubation in the laboratory. I feel the paper would be rendered more "user-friendly" if a table, summarising the experimental protocols used for each of the three filter types could be inserted (this would also permit shortening of the materials and methods section). More informative legends to the existing tables and figures would also greatly assist the reader. For example table 3 makes no reference to which filter trial is being discussed. There is much use of "respectively" (please do not use the abbreviation "respec."); This can be confusing for the reader e.g. "For trial 3 resp 4 filters of type 2 resp. type 3 were used over 4 resp. 8 weeks." and the authors could simplify some sentences to avoid the need for this

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. Binomials of microorganisms should be italicised
2. p3; line 6: planktonic for planctonic
3. P3; line 7: bacteria for bacteria's
4. P3; line 11: Barrier for Multibarrier
5. Materials and methods - please clarify what the outlet is in filter type 3. (an illustration may help the reader, here)
6. Do the manufacturers give any indication as to the frequency of filter changes? Does the authors' recommendations on extended life of filter invalidate manufacturers' warranties?
7. Similarly the authors disinfected the filters weekly by wiping the filter body/outlet with propanol. Is this in accord with the manufacturers' recommendations or was this part of the authors' protocol only?
8. page 6; line 1: "sterile distilled water" for "sterile aqua dest"
9. page 7; line 5: please substitute number for "x"
10. page 7;penultimate line Please give respective numbers rather than ">100 and <500"
11. Throughout the manuscript both the present and past tenses are used to describe the study. Please use only the past tense
12. Throughout the manuscript both a full stop (period) and a comma are used to indicate the decimal point. Please use one convention only
13. In the manuscript the terms "trial" and "period" are both used to describe each trial. This is confusing for the reader - please use "trial" throughout.
14. There is little comparison in terms of data analysis of trials 2 and 3. More information from these two silver-associated filters would be welcome.
15. Do the manufacturers recommend leak testing after reprocessing?
Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions.

**Level of interest:** An article whose findings are important to those with closely related research interests.

**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:**

Some of my research is funded by a manufacturer of products similar to those described in this manuscript. In addition, I have also given talks at meetings sponsored by this manufacturer and have received speaker fees from them.