targeting antibiotics are mostly used in the empiric treatment of early ventilator-acquired pneumonia, management of patients with infections due to *M. pneumoniae* is rarely optimal. We suggest that detection of IgM antibodies to *M. pneumoniae* should be part of the investigation protocol in patients with early ventilator-acquired pneumonia.

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**Monopercitric acid—a new disinfectant with excellent activity towards clostridial spores**

Sir,

Only a few classes of liquid chemical disinfectant possess sporcidial activity. These include iodine-based, chlorine-based, aldehyde and peroxycene compounds. There is, therefore, a need for chemical disinfectants that have sporcidial activity and which are approved for practical use. The new peroxycene compound monopercitric acid (MPCA, Kesia Pharma Wolten, Germany), which has no pungent smell like peracetic acid (PAA), was tested against spores of different clostridial species in qualitative suspension tests. The spores were prepared from bacterial isolates with high pathogenicity.

*Clostridium septicum* was found to be the most resistant clostridial species. 1% MPCA was necessary for sporcidial efficacy within a contact time of 1 min. A concentration of 0.5% MPCA was sporcidal after 5 min and 0.1% MPCA after 30 min. The lowest sporcidial concentration to show activity against *C. septicum* spores within 60 min was 0.5% MPCA. The sporcidial profile of MPCA against *C. nucyi* was comparable with that against *C. perfringens*. For these, 1% MPCA was effective within 0.5 min, 0.5% MPCA was sporcidal within 2 min and 0.1% MPCA within 15 min. The lowest sporcidial concentrations to show activity were 0.05% MPCA within 30 min against *C. perfringens* and 0.025% MPCA within 60 min against *C. nucyi*. Spores of *C. tetani* were most sensitive. 0.25% MPCA was effective after 0.5 min, 0.1% MPCA was sporcidal after 2 min and 0.0125% MPCA after 15 min. In control experiments with *C. perfringens*, 0.2% PAA was effective within 5 min and 40% n-propyl alcohol did not show any sporcidial activity within 60 min. As demonstrated by electron microscopic observations, the typical structures of *C. tetani* spores, including the outer and the inner coat as well as the core, were destroyed after exposure to 0.5% MPCA for 5 min (Figure 1).

Our results demonstrate that 0.5% MPCA is sporcidal against clostridial spores within 5 min. Unfortunately, the control disinfectants could only be examined against *C. perfringens*. However, the data obtained for MPCA are similar to results reported about PAA in the literature. As test micro-organisms, spores of anaerobic bacteria of the gas gangrenе group and the aetiologic agent of tetanus were used. These bacteria can be regarded as representative of clostridial species. Clostridial spores were selected for this study since they possess a high resistance to chemical biocides. According to the official German recommendations for disinfection, these spores can only be killed by sterilization processes such as autoclaving. In comparison, *Bacillus species*, e.g., *Bacillus subtilis* or *B. cereus*, that are often used for sporcidial testing, possess a lower chemical resistance comparable to *B. anthracis*. Therefore, the activity of MPCA against clostridial spores probably indicates efficacy against spores of aerobic bacteria.
circumvented by the use of neutral-smelling MPCA. Like PAA, MPCA offers an ecologically desirable method of disinfection since no harmful decomposition products are formed.

To our knowledge, this is the first description of the sporidical efficacy of MPCA. The excellent activity against clostridial spores seems to make this new peroxo acid suitable as an effective disinfectant for clinical use as well as possibly for decontamination during bioterrorist attacks with spores. We think that a more detailed study of MPCA as a sporidical agent is warranted.

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References


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