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Suitability of electrolyzed oxidizing water for the disinfection of hard surfaces and equipment in radiology

Robert Pintaric[1], Joze Matela[1] and Stefan Pintaric[2]
[1]University Medical Centre Maribor, Slovenia
[2]University of Ljubljana, Slovenia

Background: Hospitals face with increasingly resistant strains of micro-organisms. When it comes to disinfection, individual parts of electronic equipment of angiology diagnostics such as patient couches of computer tomography (CT) and magnetic resonance imaging (MRI) scanners prove to be very hard to disinfect. Disinfectants of choice are therefore expected to possess properties such as rapid, residue-free action without any damaging effect on the sensitive electronic equipment. This paper discusses the use of the neutral electrolyzed oxidizing water (EOW) as a biocide for the disinfection of diagnostic rooms and equipment.

Methods: The CT and MRI rooms were aerosolized with EOW using aerosolization device. The presence of micro-organisms before and after the aerosolization was recorded with the help of sedimentation and cyclone air sampling. Total body count (TBC) was evaluated in absolute and log values.

Results: The number of micro-organisms in hospital rooms was low as expected. Nevertheless, a possible TBC reduction between 78.99–92.50% and 50.50–70.60% in log values was recorded.

Conclusions: The research has shown that the use of EOW for the air and hard surface disinfection can considerably reduce the presence of micro-organisms and consequently the possibility of hospital infections. It has also demonstrated that the sedimentation procedure is insufficient for the TBC determination. The use of Biocide aerosolization proved to be efficient and safe in all applied ways. Also, no eventual damage to exposed devices or staff was recorded.

Biography

Robert Pintaric has completed his studies of radiology in 2000 and then worked in the field of angiography and interventional radiology at the Institute of Radiology, University Medical Centre Ljubljana. Currently working at the Department of Radiology at the University Medical Centre in Maribor from 2007. He is actively involved in the research field of magnetic resonance 3 T and disinfection of diagnostic facilities, equipment, surfaces and air systems with electro-oxidizing water.

robert.pintaric@gmail.com

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