

International Conference on Infectious Diseases, Diagnostic Microbiology & Dermatologists Summit on Skin Infections

October 03-05, 2016 Vancouver, Canada

Quality of water used for hemodialysis: Bacteriological and chemical parameters

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Nowadays the chronic kidney disease is considered a world public health problem. The occurrence of functional kidney failure is a growing issue and the treatment costs are tremendously high. The most applied treatment in chronic kidney disease involves substitute kidney therapy through hemodialysis, peritoneal dialysis and/or kidney transplant. The infections keep being an important cause of morbidity and mortality for patients with chronic kidney disease. The control of microbiological quality of the water for the dialysis services restricts to total coliforms, heterotrophic bacteria and endotoxins according to the Federal Brazilian regulation. The microbiological parameters in other countries are stricter with low established limits for heterotrophic bacteria and endotoxins concentration and some countries also include the *P. aeruginosa* and fungi analysis. This study evaluated the microbiological quality and physicochemical parameters of water supply and water distribution system for dialysis services located in São Paulo State, Brazil. Water samples used in 8 hemodialysis units mostly presented heterotrophic bacteria within the recommended limits; non-compliant samples were found, in the looping and reuse water, and to a lesser degree, those from public supply. We observed yeast opportunistic species of *Candida*, *Cryptococcus*, *Trichosporon* and *Rhodotorula*, potential agents that cause invasive infections in samples from distinct points of all hemodialysis units, indicating the risk of human contamination. We recommend the inclusion of some yeast genera as qualitative parameters of quality of water serving hemodialysis systems. The continuous monitoring of this serves as a relevant tool for control of fungal invasive infections in dialyzed patients.

Biography

Marcia de Souza Carvalho Melhem is a Pharmacist and has completed her MSc and PhD from Sao Paulo University in Public Health. She is a Scientific Researcher and Master's/Doctorate Advisor at Secretary of Health of the Government of Sao Paulo State. She has published about 60 papers in reputed journals and has been serving as Reviewer Member.

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