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Evaluation of reverse osmosis for improving quality of water utilized in hemodialysis devices (case study: Kerman University of Medical Sciences' hospitals)

Mohammad Malakootian[a,b], Fariba Mirzaienia[c], Zhila Honarmandrad[d,*]

[a]*Environmental Health Engineering Research Center, Kerman University of Medical Sciences, Kerman, Iran, email: m.malakootian@yahoo.com (M. Malakootian)*
[b]*Department of Environmental Health, School of Public Health, Kerman University of Medical Sciences, Kerman, Iran,*
[c]*Department of Environmental Health, School of Public Health, Kerman University of Medical Sciences, Kerman, Iran, email: fariba.mirzaie@gmail.com (F. Mirzaienia)*
[d]*Department of Environmental Health, School of Public Health, Kerman University of Medical Sciences, Kerman, Iran, Postal code: 7616913555, Tel. +983431325128, Fax +983431325128, email: zhilahonarmandrad@yahoo.com (Z. Honarmandrad)*

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ABSTRACT

The presence of some chemical compounds in water used in dialysis devices and the blood circulation system of patients causes many problems, such as acute toxicity, bone and brain diseases. Relevant standards must be observed when valuing these compounds in the water used in a dialysis device. In this study, the rate of total hardness and the concentrations of aluminum, lead, and zinc in dialysis water samples were determined. The concentrations of aluminum, lead, and zinc in the dialysis water at hospitals 1 and 3 and the concentrations of lead and zinc in dialysis water in hospital 2 corresponded with AAMI standards; the concentration of aluminum in the dialysis water at hospitals 1 and 3 also corresponded with EPH standards. Total hardness did not correspond with AAMI standard in any of the three studied hospitals. The promotion of a maintenance program in reverse osmosis devices and the timely replacement of films is important for improving the quality of water for use in dialysis systems.

Keywords: Dialysis; Reverse osmosis; Water; Kerman University of Medical Sciences' hospitals

*Corresponding author.