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Role of chemical parameter on quality of water treatment for hemodialysis and clinical evaluation results

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Water quality is one of the most important aspects of ensuring a safe delivery of hemodialysis. Contamination by metals and microbiological agents in hemodialysis water can cause clinical interferences in hemodialysis patients. Evaluating and assuring minimum levels of contamination from metals and microorganisms in hemodialysis water can improve patient safety. Water treatment plays a vital role in the delivery of safe and effective Hemodialysis (HD). As every chemical water contamination has the potential to pose clinical problems for the dialysis patient, such water should undergo proper treatment. The objective of the study was to determine the chemical quality of samples of water in a seven hemodialysis units in Iran. This study was to assess hemodialysis water quality in an output of reverse osmosis device on hemodialysis unit which is a product of Novartis Teb Company. Clinical evaluation has been done according to the MEDDEV.2.7.1. For visualization and also analysis of data, Minitab software is used, 49 samples is chosen from 2016 September to 2018 December. On this evaluation, chemical parameter that has important effect on quality of water is visualized. The result of analysis in Minitab software shows that all chemical parameters in reverse osmosis device (NOVA RO 1000) are on allowable range according to ANSI/AAMI RD62:2001 standard. On Novartis Teb reverse osmosis device designing; there is no residual risk during the evaluation of 49 samples. No adverse event and clinical interferences reported from hospitals.

Biography

Adele Shayanrad has completed his Master of Science from Semnan University, Iran in Medical Engineering. He is currently working as a Lecturer at Islamic Azad University and University of Applied Science and Technology and also as a Quality Assurance Manager at Novartis Teb. He has published more than 6 papers in reputed conference.