Editorial

The American Journal of Kidney Diseases

Intelligent Automation and Dialysis.

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Received Date : April 01, 2024
Accepted Date : April 03, 2024
Published Date : May 03, 2024

Technology is a major component of modern medical science. Some of the most remarkable technological advances in this field have been made in the creation of non-invasive procedures, which aim to enhance the measurement and examination of the human body. The creation of devices to support treatments for particular illnesses is the subject of another section. The prosthetic kidney, which is the subject of extensive research from many angles and raises high hopes for dialysis patients, is one example of this. Though research on artificial kidneys is still in its early stages, a number of obstacles need to be cleared before these devices are used in nephrology patient care.The safety of patients using these modern dialysis machines is one of these significant difficulties. Effective monitoring methods are required because of safety issues.

The proliferation of electronic devices surrounding the patient at the point of care has resulted in the ongoing generation of data in electronic format. This has created a demand for analytical techniques that can convert this data into knowledge that will ultimately aid in the treatment of patients. Some of the most promising findings as analytical tools are currently being offered by the artificial intelligence (AI) field.

Artificial Intelligence is a catch-all word that neatly encompasses ideas from various disciplines, including statistics, algorithmics, machine learning (ML), information retrieval, and data science in general. All scientific disciplines have been made possible by the exact advancements in computational technologies.to evolve into surroundings rich in data. In particular, data analysis with artificial intelligence (AI) and associated techniques is yielding huge benefits for medicine. It is possible for these advantages to spread throughout the healthcare industry thanks to the standardization of the usage of electronic health records at the point of treatment.

The six papers published in this edition of Kidney Diseases are the result of the Second Science for Dialysis Meeting: Artificial Intelligence, which was held in Barcelona, Spain, at the Hospital Universitari de Bellvitge. Participants in the meeting from the medical and AI research communities discussed how Applications of AI could make prosthetic kidneys safer. There are four sections to the current issue. First, Hueso et al. [1] addresses the advancements and difficulties of artificial intelligence (AI), machine learning (ML), and medical decision support systems in their application to nephrology and artificial kidneys. Second, Vellido [2] explores the numerous societal issues related to artificial kidneys cases involving the use of artificial intelligence in medicine.

The idea of Reinforcement Learning, a branch of machine learning influenced by goal-oriented algorithms, is introduced in Part II.

which acquire knowledge via engagement with their surroundings [3].

Two articles by Ribas Ripoll and Vellido [4] and Barbieri et al. [5] about AI and ML techniques for blood pressure assessment and management are included in Part III. The former employs methods from deep learning.

Patients with end-stage renal disease are involved in the latter. In order to increase dialysis dose accuracy, part IV concludes with experience using Mishina's artificial pancreas, which was recently implemented in clinical practice [6]. This involves individualizing the response to dialysis treatment.

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The American Journal of Kidney Diseases

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