

## APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN MEDICINE AND PHARMACY - ETHICAL ASPECTS

*Emilija J. Kostić<sup>1,2</sup>, Dimitrije A. Pavlović<sup>1</sup>, Miroslava D. Živković<sup>1,3</sup>*

<sup>1</sup>University of Niš, Faculty of Medicine, Niš, Serbia

<sup>2</sup>Institute of Forensic Medicine Niš, Niš, Serbia

<sup>3</sup>Clinical of Neurology, Clinical Centre of Niš, Niš, Serbia

Contact: Emilija Kostić

Blvd dr Zoran Djindjić 81, 18000 Niš, Serbia

E-mail: emilija293@gmail.com

In the last 30 years the development of artificial intelligence (AI) that can be applied in all areas of science has brought numerous benefits. Many researchers have explored potential applications of intelligent techniques in every field of medicine. The importance of AI is reflected in the possibility of proper decision-making, without subjectivity, fatigue, with unlimited possibilities of remembering and making conclusions. This is important in medicine, for the prevention and diagnosis of various diseases, as well as therapy monitoring. Numerous studies have shown that AI will soon replace medical staff in numerous activities, as results obtained by AI are better and more precise. A number of applications have been developed to simplify patient adherence to therapy, which ultimately affect the therapy. The application of AI is present in the pharmaceutical industry, in the design of new drugs. This precludes preclinical tests, which are extremely long and expensive. AI makes conclusions based on the available data, so the validity of data must be taken into account because extremely important algorithms are based on them. An important aspect is the protection of patient data since the possibility of data becoming public is a major ethical problem. Computers and AI are the cause why many people are replaced at their jobs, and the tendency is that such a trend continues. The question arises whether the machines should replace people in areas such as medicine, where feelings, empathy, and warmth are very important factors.

*Acta Medica Medianae 2019;58(3):128-137.*

**Key words:** *artificial intelligence, medicine, pharmacy, applications, ethics*