

EDITORIAL



The current issue of ARP contains an excellent article on artificial intelligence (AI) and its application in the Radiology domain that I would like to draw the reader's attention. AI is not really a newborn technique and the concept and naming was set up by John McCarthy during the 50's to define a system that could reason like humans, being self-sufficient in terms of cognitive and learning capabilities. For the last few years AI has gained momentum in many medical fields and one in the forefront is undoubtedly radiology. The massive use of medical imaging together with unparalleled computational power paved the way to big data analytics and data mining, which form the common ground for AI. From there new algorithms were generated first to extract, then to compare and finally to interact with data, creating new relevant clinical information not available on the initial datasets - and this has created the subset of AI now coined machine learning or deep learning where the application of neural networks allows machine self-learning mimicking the cognitive functions of the human brain. These are undoubtedly exciting times where we can anticipate a complete revolution of medical care and Radiology in particular. A recent competition among humanity (several neuroradiologists) and the AI

machine held in China favoured the use of AI to detect and characterise more rapidly brain tumors. Yes, it may be true but the emotional, ethical and other human aspects are still a major player in the patient-doctor relationship and for the time being we cannot anticipate what may become medical practice without them. Many has been written about the future role of Radiology and of the Radiologist but, as pinpointed in this well written article, fears may not be the only factor since they should also come along with the new opportunities to enhance research and ultimately clinical practice. So, join ARP in the careful reading of this AI article, that, to the best of my knowledge, is one of the first coming from an academic institution and led by physicists and/or biomedical engineers.

I do believe that this is the entry door for the new world, the world of radiomics, the world of multidisciplinary, and brief the world of personalised medicine.

Enjoy the reading.

F Caseiro-Alves

Full Professor of Radiology

Faculty of Medicine, University of Coimbra, Portugal