Special Issue

Artificial Intelligence in Oncology: Improving Imaging Diagnostics and Treatment

Message from the Guest Editors

The emergence of artificial intelligence has irreversibly affected numerous medical fields, among them—oncology. Oncology itself has always been the specialty harboring cutting-edge technologies and solutions. Rapid advances in the field of machine learning and artificial intelligence are fueling the development of computational oncology, radiomics and other areas. We have witnessed an incredible, ever-increasing amount of data that are recorded, analyzed and retrieved. This change pertains to the handling of datasets (fusion of variables originating from distinct realms of medical records, e.g., images, texts, signals, metadata, searching for relevant studies), mining and analysis (AI-based algorithms), as well as the discovery of novel relations, insights and knowledge. In this Special Issue, the goal is to demonstrate: 1. How AI algorithms have permeated oncology, starting from diagnosis, both pathologically and with the use of a variety of imaging techniques; 2. What AI's power is for predicting treatment results (more relevant predictors discovery); 3. What the AI's role is in monitoring treatment outcomes, utilizing extractable prognostic factors.

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Addressing the environmental and public health challenges requires engagement and collaboration among clinicians and public health researchers. Scientific discoveries and advances in this research field play a critical role in providing a rational basis for informed decision-making toward control and prevention of human diseases, especially the illnesses that are induced from environmental exposure to health hazards.

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