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Letter to Editor

Use of Artificial Intelligence for Lung Cancer Treatment

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LETTER TO EDITOR

Lung cancer is the biggest cause of cancer-related mortality worldwide. The majority of lung cancer patients is diagnosed late and gets ineffective therapy. Rapid, sensitive, and precise detection procedures require more attention. To diagnose lung cancer, clinicians currently depend mostly on the clinical characteristics of patients and imaging characteristics. These approaches, on the other hand, are inadequate at detecting lesions quickly and thoroughly. Artificial Intelligence (AI) is the capacity of a digital computer or a robot controlled by a digital computer to do tasks that fulfill people's requirements. A vast number of studies have shown that AI is effective not only in detection and dynamical monitoring but also in quantitative therapy during the health-protection process, demonstrating a significant capability for cancer treatment.

Liquid biopsy is being developed as a screening tool, as opposed to the usual ways of extracting biopsies arduously and massively invasively. Liquid biopsy offers a significant contribution to identifying potential genetic changes that will guide therapy options. Currently, liquid biopsy research in cancer detection is focusing on AI-developed Machine Learning (ML) to detect a restricted number of biomarkers. In comparison to previous approaches, Machine Learning (ML) is a wonderful algorithm for finding millions of microcirculatory genomes fragments that are more sensitive and easier to locate. However, due to the limitations of tumor interstitial heterogeneity, liquid biopsy use in clinical practice still has a long way to go. The intelligent detection and treatment of lung cancer have progressively become the trend of future development, thanks to the advancement of AI. Clinical Decision Support System (CDSS) is a tool that uses Artificial Intelligence (AI) to assist clinicians in making clinical decisions by analyzing clinical knowledge (such as clinical guidelines, evidence-based medicine, drug instructions, and so on) as well as basic and clinical information on patients. As the greatest representation of CDSS, Watson for Oncology (WFO) has been employed in the diagnosis and treatment of several malignancies, including lung cancer. The consistency of WFO and Multidisciplinary Teams (MDT) in the treatment of lung cancer patients was evaluated in retrospective research. In lung cancer patients, the total coincidence rate between MDT and WFO was 92.4%, according to the findings. The treatment guidelines for stage I and stage IV lung cancers are quite similar. In stage II-III NSCLC and localized small cell lung cancer, however, it is quite modest. The compliance rate for stage III NSCLC, for instance, was just 80.8%.

The use of artificial intelligence to better understand and treat lung cancer is progressing, but there are still numerous challenges to overcome. In healthcare settings, AI should adhere to a unified strategy and complete aim, as well as a standardized and standard principle created by the authority that gives finer details to practice in real-world scenarios. ML is a type of artificial intelligence that learns from examples rather than being programmed. In general, ML needs more instances than a person to learn the same ability. As a result, data collection is extremely important. It is a simple approach to access patient medical records information from electronic health records, which show all of the patient's precise information while in the hospital. However, a huge number of fragmented data offer difficulty to the clinical use of AI due to varied recording criteria in different departments or districts. Furthermore, language and cultural difficulties, patient confidentiality, and sample volume are also challenging to acquiring available data. The need to improve the efficacy and efficiency of health care continues to drive a variety of innovations, including Artificial Intelligence (AI). It has become widely used and is necessary for resolving difficult challenges in a variety of fields. We discussed a variety of AI applications in the treatment of lung cancer patients in this article. Currently, AI in cancer research is mostly focused on diagnosis, dynamic monitoring, and personalized treatment. Physicians can make rapid and precise choices by employing intelligent machines to evaluate large volumes of data, such as clinical presentations and physiological pictures. Furthermore, computer-assisted diagnostics will aid in the detection of early lesions, which will improve patient prognosis. Despite a long way to go, the use of AI in lung cancer has a bright future due to a lack of standard databases, standardized principles set by authoritative institutions, and related national rules and regulations. More sensitive and accurate machines or algorithms are required to achieve the objective of personalized therapy.

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