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Artificial Intelligence in Gynaecological Cancers: Case Study

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Abstract

Artificial intelligence (AI) is a new technical field that develops ideas, methods, and application systems to replicate, extend, and expand human intelligence. The use of artificial intelligence in medical research has been a hot topic in modern science and technology over the last five years. Medical image recognition, auxiliary diagnosis, medication research and development, treatment scheme formulation, and other elements of gynaecological cancers require a wide variety of knowledge, and AI can help in these areas. In the realm of gynaecological oncology, AI will play a vital role in advancing medicine and accelerating the transition from traditional treatment to precision medicine and preventative medicine. For example, because AI is inextricably linked to human participation, it still needs to be "humanised," which means it needs to better protect patients' privacy and health, increase legal and insurance protection, and adapt to local ethnic and national circumstances. However, it is expected that AI, particularly ensemble classifiers and deep learning, will have a significant impact on the future of medical technology, serving as a powerful driving force for future medical innovation and change.

Keywords: Artificial intelligence • Oncology • Gynaecology

Introduction

Cancer-related knowledge is developing tremendously in tandem with human society's rapid progress, resulting in a knowledge gap for practising oncologists. As our understanding of each patient grows, more and more information from the literature must be assimilated in order to provide evidence-based cancer treatment. Researchers have shown that it is difficult for doctors to invest a lot of energy in timely access to the current literature due to extensive clinical work and limited time for clinicians to acquire professional knowledge, which is especially evident in relatively backward nations and areas. This contributes to a delay in knowledge absorption, resulting in an ever-widening gap between what academic research centres actually achieved and what is actually practised. Clinical oncologists, however, face a greater challenge than doctors in other clinical disciplines in acquiring evidence-based medicine knowledge in a timely manner to support patients' tailored treatment plans. As a result, clinicians will require new sorts of tools to bridge this information gap, assess historical data, forecast future outcomes, and select the appropriate treatment plan for the current scenario. Clinicians will be able to support and embrace innovative prediction, diagnostic, and treatment strategies in an evidence-based manner, as well as providing actionable insights for improving health care delivery, allowing more people to benefit from public investment in research and development [1]. Artificial intelligence (AI) is organically appearing in the consciousness of medical personnel and the general public at this time, with academic circles unveiling new achievements and technology at a breakneck pace. Simultaneously, AI, which is expected to completely transform many aspects of present clinical practise in the near future, will play a significant role in oncology, including medical picture recognition, auxiliary diagnosis, medication research and development, treatment plan formulation, and so on. Artificial intelligence is currently being used in medicine, thanks to the development of machine learning and deep learning models. Artificial intelligence has been increasingly used in cancer for the diagnostic evaluation of medical pictures such as radiographic imaging, omics analysis employing genetic data, and clinical information in recent years. Introduce and evaluate recent reports on the use of artificial intelligence in the field of gynaecologic cancers. Artificial intelligence is widely used to evaluate medical images such as colposcopy, hysteroscopy, and magnetic resonance scans for cervical and endometrial malignancies [2]. Many studies in ovarian cancer integrate image analysis with multi-omics analysis of clinical and genetic data utilising artificial intelligence. However, only a few study findings may be used in clinical practise, necessitating more research. AI can swiftly figure out how cancer cells gain resistance to anticancer treatments, which can aid medication development and dosage adjustments. The identification of tumour neoantigens and the efficacy of tumour immunotherapy are both improved by AI. It can assist radiologists in mapping target areas or planning radiation treatment plans automatically. Manage the usage of chemotherapy medications and estimate their tolerance so that the chemotherapy regimen can be optimised. Assist doctors in making the best treatment options, reducing unnecessary procedures, and assisting oncologists in improving cancer treatment programmes for their patients. The quantity of AI articles has exploded in the last five years as a result of the widespread use of AI in medicine. 64 Despite the fact that this is an advantageous time for AI, there are still some issues to be resolved in the future. AI is still in its early stages of development and is not yet a stand-alone method. Clinicians must continue to employ AI effectively in order to generate hypotheses and optimise AI applications in clinical practise [3]. Even when AI and physicians disagree, clinicians must still interpret the data in a therapeutically useful manner. The outcomes generated by AI must be critically evaluated by human physicians. At this time, it is unclear if AI will be able to entirely replace the current clinician-dominated assessment process in clinical processes. The hybrid approach, which combines the contributions of AI and clinicians, will result in more effective diagnostic practice and better health care.

Conclusion

In the creation and therapy of anticancer drugs, AI has made a significant impact. Humans are constrained by their own expertise, making it difficult to devise the best effective treatment. According to this perspective, if doctors choose wrong treatment, patients may miss out on important treatment opportunities and may even experience a delay in their condition. It has the potential to deliver crucial insights and information that cannot be obtained through human identification, as well as personalise treatment for each cancer patient. AI could hasten the discovery of novel materials, which could hasten the development of anticancer treatments substantially. In the future, AI is expected to be a significant driving force in human cancer research and therapy.

References

1. Li, X., Hu B, and Li H. “Application of artificial intelligence in the diagnosis of multiple primary lung cancer” *Thorac Cancer*. 10; (2019): 2168-2174.
2. Elayaraja, P., and Suganthi M. “Automatic approach for cervical cancer detection and segmentation using neural network classifier”. Asian Pac J Cancer Prev. 19; (2018): 3571-3580.

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3. Emin, EI., Emin E, and Papalois A. “Artificial intelligence in obstetrics and gynaecology: is this the way forward”? In Vivo (Brooklyn). 33; (2019): 1547-1551.

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