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Editorial

Will ChatGPT Drive Radiology in the Future?

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Chat Generative Pre-trained Transformer (ChatGPT), a recently launched Artificial Intelligence (AI) tool by OpenAI, has taken the world by storm. Developed on the pre-existing GPT-3 language processing models based on 175 billon parameters, an improved version, Chat GPT-4, based on 100 trillion parameters, has enhanced its ability to undertake literary tasks to prompts, gathering information from various sources, and data analysis to produce reports following multiple AI-based algorithms.[1]

Technological advancement channeled by Industry 4.0 and 5.0 revolution has led to the integration of Internet and communication technology, AI, Internet of things, cloud computing, cyber-enabled systems, big data, machine learning, and deep-learning algorithms in the field of radiology to enhance its applications in the delivery of efficient, patient-centered healthcare.[2,3]

Consequently, ChatGPT, "the new kid on the block," empowered by both supervised and reinforcement learning algorithms, has found increasing applications in the field of medicine. ChatGPT has been reported to have shown impressive performance in answering questions evaluated at the United States Medical Licensing Examination, streamline patient discharge summaries, and generate radiology reports.[4,5]

ChatGPT, an emerging transformative technology, can be a valuable tool in radiology with natural anxiety among its users about reliability and the benefits of its incorporation in current radiology incorporate practice.[6]

At the outset, the clinical application of ChatGPT in radiology practice can be huge. The workflow in radiology can be streamlined in an efficient manner with simplification of generation of radiology reports and faster transfer of patient information. This can enable quick turn around and avoid backlog of reporting that can affect management. Timely reporting of images can also enable a prompt decision about the management of the patient. Interpretation of the images and identification of pathologies can be performed with the aid of ChatGPT using an enhanced process of "radiomic" AI programs.

ChatGPT can also play a crucial role in patient education of future radiologist in training. It can be used to develop modules on spectrum of radiology techniques and in addition, interactive simulation and questionnaires can be developed. Personalized teaching modules can be created using this tool that would aid in improving the knowledge of radiologists, allow remote access solutions, and provide objective assessment and feedback after teaching sessions. Patient information tools and modules can be developed in patient friendly way with interactive modules to answer patient's queries. Patient satisfaction survey can be streamlined and assimilated to allow audit evaluation and further improvement in the technology.

Concerns about validity, mistakes, and errors in the patient decision making process are indeed valid as with any emerging technology. Integration of ChatGPT is likely be no different. However, technology and innovation are constantly evolving. The success of ChatGPT in radiology subspeciality may depend on its value created by future safeguarding strategies such as enhanced scrutiny, making it affordable and seamless assimilation in current radiology practice. Effective ChatGPT applications in radiology may allow enhanced diagnostic certainty, rapid turnaround of patient radiology information reports, and better work-life for radiologists!

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