Artificial intelligence and COVID-19 pandemic: The new ‘State of The Art’ or just ‘The Need of The Hour’?

Dear Editor,

Artificial intelligence (AI) is programming in machines done to simulate human intelligence and is developed immensely over the years but its penetration in health care system had been low. In recent years, due to improved documentation of health records as electronic data and advancement in technology for data handling, clinicians can solve complex clinical problems.\(^1\) Recent pandemic has further increased the role of AI in health care considering its high computation power. We read with interest the article present issue has a focused review article Ahuja et al. regarding the widespread applicability of the AI in the present pandemic from interpretation of radiological investigations to managing treatment modalities.\(^2\)

Incidentally the present COVID-19 pandemic was first reported by AI-based company as a pneumonia of unknown etiology in China in December 2019.\(^3\) Since then the widespread pandemic situation has overcome the human resources (anesthesiologists and physicians) required to tackle the ever-increasing burden of patients. Hence, many non-core specialists were deployed in various COVID facilities to care for patients.

COVID-19 pandemic is spread by aerosols and close contact and to prevent contracting the disease, the health care workers must don in personal protective equipment which may affect overall care of the patients. AI enabled technology will help to provide minimal touch medical care without affecting the outcomes. It may help in picking up early warning signs of COVID-19 by integrating the clinical and radiological signs into a predictive model and triage them as per severity.\(^4\) Considering the infectivity of the disease, AI enabled robots were also deployed in some centers for delivering drugs, monitoring of vitals and point of care blood testing.

The academics in medicine has been adversely affected by the pandemic and AI enabled skill training is an upcoming field an integrated approach with AI enabled curriculum blended with tradition approach may help augment current training.

Use of AI has some limitations like lack of authenticity of the quality of data, absence of human touch, lack of blinded evaluation of data, lack of generalizability as the prediction models are valid for the data set tested and lack of published level one evidence. Also, the algorithms used for prediction modeling of AI are often not in public domain and it may be difficult to justify the decision making. This ‘black box’ phenomenon goes against the principle of evidence-based medicine and it therefore, sometimes becomes difficult to trust such a system.

AI can help as an adjunct in health care by supplementing for scientific knowledge but cannot be the replacement of human touch, sensibilities, responsiveness, and skill that are indispensable in health care. Further development is needed to ensure that better quality of data is being generated to improve the AI system. [Figure 1]. Any AI-based system is prone to cyber-attack and this may lead to its malfunction.\(^5\)

So, efforts must be taken to ensure data security, patient safety, and accountability.

AI has been especially useful adjunct for management of ongoing COVID-19 pandemic even in low-income countries. It offers immense benefits to the patients and health systems, but its use should be carefully guarded and periodic audits should be conducted to find out if any adverse outcomes. Medical fraternity should come forward with their feedbacks and learned inputs to help further its development to the overall betterment of mankind.

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