Short Communication

Artificial Intelligence and Medical Ethics: Unresolved Issues

Nagpal K* and Prakash S
¹Consultant Neurology, Manipal Hospital, India
²Senior Consultant, Neurology and Director - Cognitive Neurology Division, Neotia Getwel Healthcare Center, Siliguri, India

*Corresponding author: Kadam Nagpal, Consultant Neurology, Manipal Hospital, Dwarka, New Delhi, C-86 South Extension Part-II, New Delhi, India-110049

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Artificial intelligence (AI) in healthcare and neurosciences include the revolution of 'GNR' that is Genetics, nanotechnology and robotics. The revolution in 'G' or genetics incorporates understanding the information processes underlying life and reprograming our biology to achieve virtual elimination of disease with expansion of human potential and radical life extension. The 'N' revolution is nanotechnology that will help in redesign and rebuild molecule by molecule of our bodies and brain and the ecosystem with which we interact. And then the most important impending revolution is 'R' revolution or the 'robotics' which will provide with human level robots with their intelligence derived from our own but redesigned to exceed human capabilities. The technology has brought us to the brim of the 'era of singularity' where man and machine will be merged as one and there will be no physical distinction between physical and virtual reality [1].

Post singularity whenever a trans-human intelligence is created and it launches into self- improvement and replication, it will explode into an era of fundamental discontinuity, which can be hard to predict, and time will decide whether it will be a boon or bane for the humankind.

However, AI with its robust capabilities of voluminous clinical data assimilation and integration will serve a role in diagnosis, decision making and personalized medicine [2]. As the technology is advancing into the era of 'Singularity' where the AI based diagnostic algorithms when applied in radio diagnosis, can also serve as a 'second opinion' for neurologists and neurosurgeons. Furthermore, with the advent of 5G technology AI applications will expand into the physical realm of robotic prosthesis, mobile manipulators and delivery of telemedicine. This explosion of artificial intelligence is so reminiscent of Arthur C. Clarke's third law, which states, "any sufficiently advanced technology is indistinguishable from magic."

Just when world had been labelling AI as fourth industrial revolution, there was a fear as well that probably in future the job of doctor, be it a neurologist or a neurosurgeon could be well replaced with a robot who might surpass the skill of a surgeon or replace the interpreting skills of a radiologists or even incorporate the analysis

of a neurologist. This is where we analyze that ethical boundaries have to be drawn which are literally non-existent at the present. It is understood that the entire patient doctor relationship relies on empathy and trust which cannot be replaced by a robot nor algorithm, and neither could empathize with or interpret complex, multi-layered challenges involving psyche of the patient and provide a non-linear approach in management [3,4].

As machines become more intelligent and able to aggregate and interpret data that usually comprises of social history, medical / disease related history, facial recognition, fingerprints; a threat to data privacy looms ahead. Although the healthcare records might be important for clinician access, but it will pose a threat when data will fall prey to hands of marketing agencies and insurance companies. The data privacy laws came into existence only recently when a leading social media giant leaked the sensitive details for political purposes, but modifications of this law, has to be a continuous process, in time to come.

As it is understood that all the machines within hospitals usually work on a third-party software including life-saving drug delivery systems or ventilator assist devices; a big 'What If' prevails, when the control of this software is reset once the patient is connected or if the controls fall in wrong hands. Furthermore, as nanobots intelligence breaks the barriers; formation of new viruses or evolution of previously extinct diseases in a drug resistant form, can pose a health threat and we might be unknowingly ushered into an era of bio-terrorism. Challenges and issues like these often give shudders to the medical community.

The most important facet in ethics is accountability and responsibility. As the dependence upon machine and robots increases, the question of accountability often arises. If a situation arises when a decision made by algorithm is wrong and leads to harmful outcome, then who takes the onus, is a matter of frequent debate. For example, if with telemedicine a treatment or surgery goes awry in distant country, then it will be whose area of jurisdiction is still unknown. 'Algorithmic conflict' is an area is another area of concern where answers are yet to be found, wherein if there is a clinical conflict between a doctor and robot, then whose analysis has to be accepted as final. Finally, it would be even more distressing to understand that how the patients in a setup would react to such algorithmic errors or conflicts. As we understand that there is a drive to increase patient empowerment and autonomy, but on the other hand, patient should not feel 'left out' in the decision-making. Furthermore, AI implementation and its algorithmic computations should be fair and transparent without any 'bias' towards its developing masters.

Therefore, it is essential that research focusing on ethical, social and political challenges in AI is multidisciplinary, drawing a perspective of communities involving developers of these tools, the intermediate users that will be doctors and healthcare providers and

those that will be an end user, which is – the patient.

Even if the futurists might label humans as 'second grade computers', still there would be certain tasks in medicine which robots will never be able complete. It should never be labelled as 'Tech Vs Human', instead it should be integrated and accepted to provide seamless healthcare, which is less error prone, efficient and bound by appropriate legislation and regulations.

References

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