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Artificial Intelligence (AI) and Biotechnology Enable Unimagined Medical Advances

Doepp Manfred*

HolisticCenter, 13 Haupt St., Abtwil 9030, Switzerland

***Corresponding author:** Doepp Manfred, HolisticCenter. 13 Haupt St., Abtwil 9030, Switzerland

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ABSTRACT

Rarely in history has medicine changed as rapidly as it is today. New methods are constantly being introduced that can improve health outcomes. Six such methods are presented here:

1. Artificial Intelligence (AI) in Diagnosis and Treatment
2. 3D-Printed Organs
3. Tele-Surgery
4. Nanomedicine
5. CRISPR Technology
6. Quantum Teleportation

This can solve a number of problems in medicine, to the benefit of patients.

Introduction

Our healthcare system is being significantly transformed by advances in biotechnology and artificial intelligence (AI) [1,2]. This new era is characterized by greater precision and improved individualization. You could call it a revolution. The new methods are still unknown to most normal citizens, as most people are still at the level of Newtonian physics. However, to prevent fears arising from the confrontation with the new, the innovations should be publicized as widely as possible. Below, we present six medical innovations in which the new technologies are being used and which have the potential to redefine healthcare.

Artificial Intelligence (AI) in Diagnosis and Treatment

AI could improve the medical landscape at both an administrative and diagnostic level. The ability of AI to quickly sift through millions of scientific papers and patient records increases the ability of hospitals and doctors to improve patient care. For example, the start-up Oxipit [3] has developed AI solutions that help radiologists analyze medical images (e.g. brain scans for stroke patients), reduce errors, save time and improve patient outcomes: "AI Solutions for Medical Imaging". The integration of AI into the healthcare system is progressing and promises not only to improve the quality of care with every advance, but also to significantly reduce healthcare costs. New drugs can be developed in less time.

3D-Printed Organs

In the not too distant future, 3D bioprinting could put an end to the era of long waiting lists for transplants and offer personalized solutions to patients in urgent need of organ replacement [4]. With this innovative technology, biological tissues and organ structures are produced layer by layer. The process is similar to conventional 3D printing, but uses living cells - called "bio-ink" - as the starting material [5]. Because the bio-ink is derived from the recipient's cells, the body is more likely to accept the transplanted tissue as part of itself, minimizing the need for lifelong immunosuppressive therapy. Although 3D-printed organs are still several years away, biotech companies are developing technologies to improve the speed and precision of 3D bioprinting, taking a step towards a future where organ shortages are no longer an issue.

Telesurgery

Telesurgery enables a surgeon to perform a complicated operation from any distance. This is made possible by a combination of advanced robotics and high-speed data connections. With this technology, surgeons can control robotic instruments remotely and provide expert surgical care to patients no matter where they are in the world. This technology is already being used for minor procedures such as joint surgery, but its use is also being tested in neurosurgery [6].

Nanomedicine

Nanomedicine is an innovative area of medical research in which nanometer-sized tools are used to control the body and target specific cells for treatment [7]. One area where nanomedicine shines is in the targeted delivery of drugs. While conventional drugs can attack both diseased and healthy cells, nanoparticles can be designed to deliver drugs precisely to the diseased cells, minimizing side effects and increasing the effectiveness of treatment. One example of this is the C60 fullerenes [8,9]. Nanomedicine has the potential to become a cornerstone of minimally invasive treatments.

CRISPR Technology: Revolution in Genetic Medicine

CRISPR technology ('gene scissors') allows scientists to selectively replace or modify specific sections of the genetic code with the utmost precision [10]. This technology is being developed by biotech companies around the world [11], including Caszyme [12], which specializes in providing research services for CRISPR applications and developing new CRISPR-based molecular tools. Caszyme was first to demonstrate that CRISPR-Cas9 can be used to operate precise double strand breaks in DNA, thereby enabling a new era of gene editing. With the help of these tools, researchers are making significant progress in the treatment of genetic diseases such as sickle cell anemia, congenital blindness and some heart diseases. Given the ethical debates surrounding advances in research, CRISPR is considered one of the most controversial genetic engineering technologies.

Quantum Teleportation

The cosmos has a holographic and infinite storage capacity for information. This can be retrieved using suitable methods, such as the Kozyrev mirror [13]. Conversely, the individual information content can be modified or harmonized by means of resonance and entanglement. Quantum teleportation is a process that transfers the quantum mechanical state of a quantum system (source), e.g. a photon or a qubit, to another quantum system (target) [14-17]. The state of the source is changed by the transfer. The method uses a quantum channel for the transmission. A pair of entangled particles is used for this purpose. Quantum teleportation uses properties of quantum entanglement to transfer the state from the source to the destination without measuring it. The destination can theoretically be at any distance from the source, and communication is instantaneous, without speed. An equivalent description of quantum teleportation in the context of quantum gravity was found in 2016 by Ping Gao, Daniel Louis Jafferis and Aron C. Wall when they introduced a new type of wormhole [18,19]. The size of the particles to be transmitted and also the scope of transmitted states and information are constantly increasing in postmodern physics [20]. In energy and information medicine [21], the method is used diagnostically to extract information patterns from the global information field that are characteristic of the patient and his deviations from the norm. Information patterns that are able to harmonize this condition are transferred for therapy.

The Timewaver (TW) Company describes it as follows [22] : " Information Field technology is a proprietary technology of TimeWaver. It is based on the theory that the Information Field is the non-material area through which spirit and matter communicate. It reflects what we consider to be the spiritual meaning of life events. The existence of such a field is intensely discussed in scientific literature [23-25]. Analysis in the Information Field is designed to search for the information patterns that contribute to the harmonization of the Information Field. For this purpose, a priority is assigned to contents such as descriptive sentences, figures, symbols and further information patterns. The TW system identifies disturbances in the human information field. This information is compared with the large TW databases, which contain complex collections of information patterns (> 1 million). The analysis covers all areas of life and almost all of the world's medicine, and these patterns are also used for therapy." Computerized quantum teleportation with the help of the information field in medicine certainly has a great future. However, it is necessary for the therapist to ensure three terms and conditions :

1. Freedom from stress,
2. A positive intention, and
3. Neutrality without expectations or doubt.

This is because the higher the sensitivity of a method, the more susceptible it is to interference.

Conclusion

The new possibilities of integrating the capabilities of modern physics, computer and biotechnology into medicine are phenomenal. Fields are being opened up that enable unimagined successes in diagnostics and therapy. As is always the case when a new era is ushered in that makes significant interventions possible, the question arises as to the ethics of the users. Such powerful methods can be used for the benefit of patients, but they can also be misused. Just think of the CRISPR gene scissors, which open the door to genetic manipulation. But AI also makes it possible to manipulate information of any kind, especially in social media. It has never done humanity any good to try to be like God. A globally accepted ethics committee on new technologies should be set up.

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