

Study on the Influence of Artificial Intelligence Based Hepatocyte Growth Factor Activating Factor Inhibitors on Genetic Expression of Human Hepatocellular Carcinoma

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Abstract: Hepatocellular carcinoma (HCC) is one of the most common malignant tumors, and its incidence ranks fifth in the world. With the clinical application of liver transplantation, the prognosis of HCC patients has been significantly improved. However, due to the high invasion and metastasis of HCC, it is still difficult for patients to escape the fate of recurrence. Artificial intelligence (AI) and big data technology are highly popular in the information age. In recent years, AI technology has also been widely used in medical and health fields, and it has a very broad development prospect. With the improvement of material and cultural living standards and people's health awareness, the demand for improving the level of medical technology and the quality of health services is becoming more and more urgent. In the medical and health field, the scientific and reasonable application of AI technology can help doctors to identify the diagnosis scheme more scientifically and reasonably. In this paper, the application of AI in medical and health field is discussed, and the construction strategy of medical diagnosis system based on AI is put forward, and then the influence of hepatocyte growth factor activator inhibitor on the genetic expression of human HCC is studied by AI.

1. Introduction

China is a high incidence area of HCC, and about 110,000 people die of HCC every year. The invasion and metastasis of tumor cells is a multi-step and strictly controlled process, and the interaction between tumor cells and host tissues, cells and extracellular matrix is an extremely complex biological process, which is closely related to the long-term effect of tumor treatment [1]. With the gradual maturity of AI-related technologies, AI is gradually going out of the laboratory and developing from theoretical and technical research to industrial landing [2]. AI technology covers many subjects, including linguistics and informatics. The combination of these disciplines makes AI technology play its substantive significance and role in many fields [3]. It is becoming a hot research direction to apply AI to "AI+ medical care" in the medical and health field. The timely and effective use of AI in the medical industry can help doctors to identify the diagnosis scheme more scientifically and accurately, which plays a very great role in promoting the growth of China's medical industry [4].

With the improvement of material and cultural living standards and people's health awareness, the demand for improving the level of medical technology and the quality of health services is becoming more and more urgent. In the past, the medical diagnosis method was to check the patient's illness with the help of medical equipment, obtain the pathological features by taking CT, and then analyze the illness by the doctor to get the diagnosis result [5]. This traditional diagnosis method will be influenced by the level of doctors, especially the diagnosis of some intractable diseases, and the reliability of the results can not be guaranteed. In the information age, AI technology has been widely developed, which provides greater convenience for people's daily life and production activities and effectively improves people's quality of life [6]. Applying AI technology to the medical field can improve the technical level of the medical field and reduce the labor intensity of medical staff by virtue of the advantages of AI technology [7]. This paper

discusses the application of AI in the field of medical health from the aspect of intelligent medical application, and puts forward the construction strategy of medical diagnosis system based on AI.

2. Overview of AI technology

AI technology refers to simulating people's real thoughts and actions through advanced technology and inputting them into intelligent devices, so that intelligent devices can do some simple work. The core of AI is algorithm, and the basic condition is data. The key factor of combining medical care with AI is algorithm+computing power. Effective big data in medical field is the basis of AI application. The effectiveness of medical data includes the degree of electronicization, which emphasizes data supply, and the sharing mechanism emphasizes the convenience of data acquisition channels [8]. Compared with the backwardness of traditional health management technology in information acquisition, processing and application, AI technology provides accurate, systematic, standardized and personalized medical solutions through real-time collection, scientific analysis, integrated processing and risk assessment of health data. The research and development direction of medical AI technology is shown in Figure 1, for example.

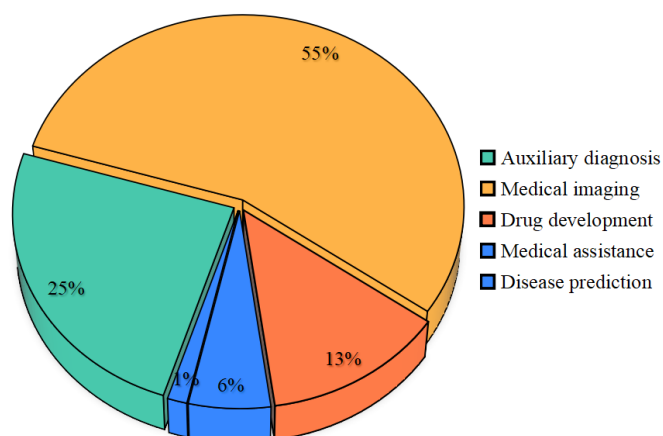


Figure 1 Proportion of research and development direction of medical AI technology

The medical industry is highly complex, which is the difficulty of automation and intelligence. With the rapid growth of AI technology, AI technology is widely used in disease prevention, risk monitoring, new drug development and other fields. The growth of AI technology in the medical and health industry can be roughly divided into three main stages; The first stage is the stage of informatization growth of medical and health industry; The second stage is the stage of using information technology to carry out medical auxiliary work; The third stage is the highly popular stage of AI technology, that is, the stage of using AI technology for medical production activities. AI medical intelligent decision-making is to make computers learn professional medical knowledge and diagnose diseases. Pathologists must constantly learn different image data in order to accumulate rich experience in image diagnosis. The AI system can memorize a large number of image data by self-learning, make an initial judgment on the image results, and quickly get the diagnosis results after being checked by doctors.

3. Application of AI in medical diagnosis

In traditional medical image diagnosis, doctors need to look at medical image data such as X-rays with naked eyes. AI medical image analysis system can automatically identify patient image data, and AI products applied to medical image analysis can give diagnosis conclusions independently [9]. AI technology can play a good role in medical treatment. Due to the lack of equipment and technology, the traditional medical diagnosis often leads to the phenomenon of missed diagnosis and misdiagnosis in actual use, which will not only affect the actual diagnosis and treatment effect, but even cause patients to delay treatment time and cause serious damage. Health management is to change passive treatment into active health monitoring and realize data collection

throughout the user's life cycle. The technical growth of health management platform promotes the innovation of medical and health application, provides efficient medical and health services, effectively relieves the contradiction between supply and demand of medical resources, and provides support for improving people's health level. Fig. 2 is an AI-based medical expert system model.

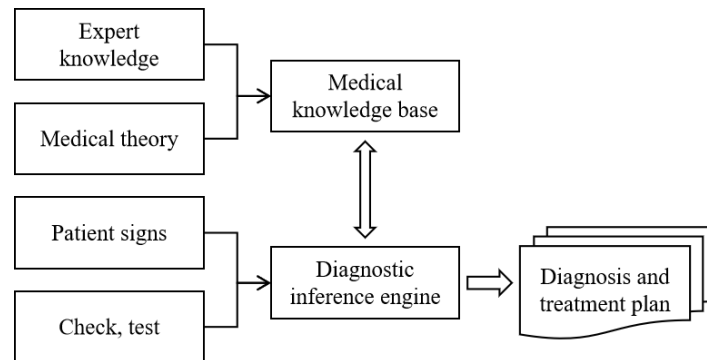


Figure 2 Medical expert system model

Medical expert system is one of the main research directions of medical AI researchers at present. Creating a new medical expert system through AI technology can imitate the diagnosis and consultation of medical experts and provide medical consultation effect for some patients. In the practical application process, the expert system will directly introduce some knowledge related to a certain professional field into the expert system. Aiming at this knowledge, the expert system can carry out all kinds of work in an orderly way in combination with the actual situation. Applying AI technology to clinical work needs to establish a regulatory framework, strengthen constraint guidance, ensure the growth of AI in a safe range, and realize the process supervision of AI+ medical health algorithm design and application of results. In the process of practical application, expert system will involve many aspects of content and knowledge. All the expert knowledge stored in the knowledge base not only has a fixed data structure pattern, but also has its own language expression, which is beneficial to daily query, search and utilization.

In the growth of medical big data and AI, personal privacy protection and national security issues have been paid attention to. With the rapid growth of AI technology, relevant departments should also pay more attention to the management system and optimize the existing hardware facilities such as staff, equipment and management system to ensure that the hardware facilities can meet the practical application requirements of medical AI technology [10]. When analyzing and integrating these medical data, it is necessary to combine the actual situation and import all these data into Watson system as much as possible. This is conducive to the scientific and rational use of these data, can help doctors provide better diagnostic advice for patients, and can also promote the long-term stable growth of medical and health fields. The medical industry should strengthen service development and technological product innovation, and promote the growth of intelligent medical care. Improve the existing information system. At the same time, medical institutions should update equipment and facilities in time, and also need to train relevant personnel to ensure that intelligent medical care can be well developed and utilized in the future market environment.

4. Application of AI diagnostic system in genetic expression analysis of human HCC

With the clinical application of liver transplantation, the prognosis of HCC patients has been significantly improved. However, due to the high invasion and metastasis of HCC, it is still difficult for patients to escape the fate of recurrence. Due to the imperfection of the medical information system in the past, and the shortage of doctors' time, there are often various problems in recording medical records, such as irregular recording format, abbreviation, abbreviation, etc., and there are a large number of overstocked medical records in hospitals that cannot be put into storage and analyzed. Nowadays, by introducing AI, computers can automatically identify clinical variables and indicators in medical records by using natural language processing technology, and transform these

unstructured medical records into unified standard data for doctors to analyze. It is of great value to study the new expert system of HCC, which can improve the early diagnosis rate of HCC. Health management has strong personalized characteristics, and it is often necessary to provide differentiated one-to-one services according to individual conditions. However, the limited number of health management practitioners with good professional ability has limited the growth of health management services to some extent.

5. Conclusions

AI is constantly developing and has been widely used in the field of medical care and health at this stage, which is of great significance to the growth of medical care. Reforming the existing medical system through AI technology is the development prospect of the medical and health industry in the future. Driven by the new wave of AI, all aspects of health whole process management will become more and more intelligent, and the medical industry characterized by data-intensive, knowledge-intensive and mental labor-intensive will be deeply integrated with AI. This paper studies the application of AI technology in medical field. With the advent of a large number of AI technologies, more advanced technologies and equipment have greatly changed the medical industry. Medical workers should give full play to the value of AI technology in grass-roots doctors' assistants, assisting health management and follow-up work, and constantly improve and perfect relevant laws, regulations and ethical norms, so as to promote the high-quality and efficient growth of medical undertakings in China. At present, there are still some problems in the application of AI technology, such as technical safety and low level of informatization. In view of the difficulties in the application of AI technology in the medical field, it is necessary to strengthen technical research and promote the in-depth application of AI technology in medical health.

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