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Internet-based Hospital Management in Chronic Kidney Disease

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Abstract

With the continuous development of science and technology, the function of the Internet platform is also constantly improving, playing an important role in all levels of society, and then promoting the reform and innovation of all walks of life. At the same time, the medical industry and mobile Internet began to gradually integrate, opening a new model of online hospitals. By referring to relevant literature and official documents, this paper introduces the development background of Internet hospitals in China and the development status abroad, analyzes and points out the problems existing in the management of chronic kidney disease (CKD)in Internet hospitals in China, and further explores new ideas for the future development, so that it can better optimize the reasonable allocation of medical resources, avoid the waste of resources, and improve the utilization rate. So as to provide patients with more comfortable, convenient and accurate services.

Keywords

Internet Hospital; Chronic Kidney Disease; Prevention.

1. Introduction

Chronic kidney Disease (CKD) is mainly a chronic syndrome of impaired kidney structure and function, which affects the health of individuals. Patients have different manifestations at different stages. Patients in stage 1-3 of chronic kidney disease may not have special obvious symptoms. As the disease progresses to CKD stage 4, the symptoms are obvious at this time, most of which are low spirits and lower limb edema, while stage 5 patients are mostly uremia symptoms. In the latest results of the Global Burden of Disease study, 697.5 million people were affected by chronic kidney disease in 2017, Among them, the number of patients in China is 132.3 million[1].Although there are clinically related drugs for the treatment of CDK and CKD complications, the therapeutic effect is not satisfactory, so it is of great significance for the early prevention and treatment of the disease.

2. The Development of Internet Hospitals in China

2.1 Definition

Internet hospital is a medical network platform with Internet data as the carrier and physical hospitals as the strong support, which can realize mobile network inquiry, standardize diagnosis and treatment and medication, and one-click home. Internet hospital is a high degree of information integration based on the digitalization of each hospital business. It makes full use of the mining and sorting of databases, knowledge bases, and artificial intelligence (AI), so as to optimize medical process and quality. Internet hospitals in China are still in the stage of development, so there is no clear and authoritative definition.

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2.2 History of Development

In July 2015, The State Council issued the Guidance on actively promoting the "Internet +" Action, a document related to medical reform, encouraging medical institutions to follow the development trend of "Internet +", grasp the market demand orientation, strengthen the sharing and cooperation of innovative resources, and promote the timely transformation of cutting-edge technologies and innovative achievements[2-3]. In December of the same year, China's first Internet hospital was launched in Wuzhen, Zhejiang Province, marking the beginning of China's Internet hospital development. On November 7, 2018, the Fifth World Internet Conference opened in Wuzhen, and Wuzhen Internet Hospital became the focus again.

2.3 Application Status

In recent years, with the continuous support of national policies and the rapid development of science and technology, the Internet medical industry is also developing rapidly and has become an important part of China's medical system. As of June 2021, according to incomplete statistics, the number of existing Internet hospitals in China has reached more than 1,600. The National Health Commission attaches great importance to "Internet + healthcare", earnetfully implements the "Opinions of The General Office of the State Council on Promoting the Development of" Internet + Healthcare ", gives full play to the positive role of Internet and other information technologies in the medical field, and timely formulating supporting documents. A series of supporting documents, such as "Internet Diagnosis and Treatment Management Measures (Trial)", "Internet Hospital Management Measures (Trial)", "Telemedicine Service management Standards (Trial)", and "Hospital Intelligent Service Grading Evaluation Standard System (Trial)", have been issued successively. From the aspects of service connotation, access, practice rules, supervision and management, etc. To standardize the healthy development of Internet diagnosis and treatment, Internet hospitals, telemedicine and smart hospitals. Based on information technology, carrying out online diagnosis and treatment services and creating a new model of virtual medical treatment are important ways to optimize the rational allocation of medical resources and provide patients with fast and comfortable treatment[4-5]. With the strong support of national policies and the continuous upgrading of Internet technology, Internet hospitals are also developing continuously. Despite the prosperity of the Internet market, there are many articles about the problems in the construction of Internet hospitals in China, such as "the business model has not been established to lead the healthy development of the industry, the lack of top-level design, the lack of attention from the leadership, and the lack of professional (who knows technology and is familiar with business) talents". Therefore, the network coverage is not perfect in our country, so the network in rural areas and remote areas is relatively underdeveloped, the information circulation is relatively backward, the development of Internet business is frustrated, and the elderly patients are in the majority, which also hinders the redevelopment of Internet hospitals.Compared with China, the medical model abroad has shifted from basic treatment to nursing services[6]. Since the emergence of new technologies such as NFC technology and iBacon, its medical services have been integrated with iot technology. It can not only protect the privacy of patients, but also reduce the complicated medical process, improve the utilization of resources and medical quality[7].

3. To Analyze the Current Status of CKD Management in China

3.1 The Development of Community Medical Service is Not Perfect

Because China has not paid enough attention to the management of chronic diseases, its development is relatively slow. Community medicine is a new management model for chronic diseases that is dominated by the community[8-9]. At present, the community health service for its management of chronic disease patients to establish personal health information data, regular visit survey, in the prevention of non-disease and the treatment of pre-existing disease, to develop scientific and effective diagnosis and treatment programs, to a certain extent, can reduce the prevalence of chronic disease, improve the cure rate, play a positive role in the treatment of chronic disease[10-11]. Compared with

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large hospitals, community medical services are more suitable, and have higher advantages in terms of quick access and economic benefits. This model of chronic disease management, where the community first collects data, then identifies problems and develops solutions, before intervention and evaluation[12]. However, the development of community hospitals in China is still in the initial stage, and the development of hospital facilities, specialized personnel and diagnosis and treatment resources is relatively imperfect, which will delay the patient's condition or even aggravation. In addition, more and more medical data are tilted to large hospitals, and community hospitals lack sufficient doctors. For a long time, large hospitals have superior medical resources, and the gap between them is widening. According to the survey, CKD patients lack trust in the diagnosis and treatment of community hospitals, and tend to go to large hospitals for treatment, which causes great obstacles to the development of community hospitals, so that community diagnosis and treatment institutions do not play their due role in the management of patients with chronic diseases.

3.2 Lack of Data Management

At present, the system level of China's medical and health industry is not uniform, unable to achieve a high degree of unity, incompatible systems cause conflicts, data can not be normally transmitted, patients' medical records, electronic files and other information can not be effectively exchanged, resulting in doctors and nurses are not familiar with the patient's past history, family history and other information, unable to fully understand the patient's condition, delay diagnosis and treatment time, and even mistreatment and loss of treatment. In addition, there is no formal software to record residents' personal information data, and the monitoring of signs of patients with chronic kidney disease is not perfect. At present, APP and WX small programs are more commonly used in the management of chronic kidney disease in online hospitals, with incomplete recording data, and practicality and popularity need to be improved. While recording data, attention should be paid to protecting the privacy of patients. For example, the NFC system developed by Brigham and Women's Hospital in the United States enables nurses to safely track patients' medication use[13]. Another company called WellDoc, They use mobile Internet technology to assist medical staff in the management of chronic diseases[14], patients can learn about diabetes through mobile phone related software, record and store personal data, and upload it to the cloud. These data can be calculated through the cloud, which can not only provide personalized feedback for patients, but also enable their responsible doctors and nurses to know more accurate data of patients in time,make a better treatment plan[15-16].

3.3 Patients had Less Understanding and Poor Self-management Awareness

According to experts, CKD has the characteristics of "three high and three low", that is, high incidence, high prevalence of cardiovascular disease, high mortality, low awareness rate of chronic kidney disease, low prevention efficiency and low awareness rate[17-18]. Chronic kidney disease can be diagnosed if the patient's urine routine and blood tests show the above indicators for more than 3 months. According to incomplete statistics, there are nearly 120 million patients with CKD in our country, of which the proportion of CKD patients with glomerulonephritis is as high as 40%, and is still growing at a rate of 15% per year. Because the early symptoms of chronic kidney disease are not obvious, and most of the patients are over 40 years old, when the symptoms appear, they are mistakenly thought to be a common disease, and they are not paid attention to it. In addition, the public awareness rate of this disease is low, so many patients do not see a doctor until CDK develops to the stage 5 uremia stage. The causes of kidney diseases are diverse, such as emotion, diet, work and rest, drug and drug under the interaction of many internal and external factors can cause disease, but often because people do not pay attention to life inadvertently develop many bad living habits, long-term past easy to cause chronic kidney disease, and even induce related complications[19]. Patients had less and incomplete knowledge of chronic kidney disease, and did not understand the prevention, diagnosis, treatment and prognosis of the disease. In the process of treatment, patients often do not follow the doctor's advice and do not cooperate with the doctor's treatment, which makes the treatment progress slow and misses the best treatment time. In addition, most of the patients are

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over 40 years old, so people have to take care of the elderly and children in middle age, and the family burden is heavy. In addition, he was busy with work, psychological burden and economic pressure, so the treatment effect was not ideal.

3.4 Doctor-patient Conflicts have Always Existed

The conflict between doctors and patients is not only an urgent problem to be solved in the health industry, but also the main focus of today's society. Lack of trust between doctors and patients, medical trouble, medical ethics and other topics are often reported. In recent years, medical disturbances have occurred frequently and been reported, resulting in the increasing distance between patients and doctors, and the doctor-patient gap. In addition, the communication between doctors and patients is delayed, doctors cannot explain the condition to patients in time, and their speech is blunt. Some doctors conduct extensive examinations for the benefit of their departments, and their professional quality is low, which destroys the brilliant and selfless image of doctors as "angels in white" in the hearts of patients. "Seeing a doctor for three minutes, queuing for two hours" has become an ironic saying, which means that patients have to pay more time and energy to queue up, register, diagnose and prescribe treatment, pay fees, check and other cumbersome procedures. In comparison, doctors' diagnosis and treatment time for patients is too short. Therefore, under the background of long queues and difficulty in seeing a doctor, most patients have some resistance and psychological pressure to go to the hospital. It can be said that patients have been anxious and dissatisfied since they entered the hospital[20]. Because patients do not understand the discomfort symptoms and complications caused by medication or surgery, coupled with high expectations before surgery, and now people's awareness of rights protection is relatively strong, once adverse reactions occur, it is easy to occur medical trouble. In addition to publicizing the low medical technology of a hospital or doctor, and the bad media smearizing and misleading on the Internet, people's distrust of hospitals or doctors becomes more and more intense, and the doctor-patient conflict becomes more intense.

4. The Main Problems and Thinking

In essence, the Internet and hospitals only rely on Internet technology to integrate medical and health resources, but have not achieved a high degree of integration, and only improve the efficiency of medical resources to a certain extent. Although Internet medical services can provide relevant services for patients with chronic kidney disease, there are still many problems in Internet hospitals in China: (1) limitations of acceptance. Most patients with chronic kidney disease are over 40 years old, so their acceptance of new things is low, and they need hospital staff to guide them to learn related operations. (2) Technical limitations. Patient data security and data sharing need to be strengthened. Many insurance companies can get patients' data in the first place. Although the Internet makes it convenient for hospitals to record patients' data (medical records), hospitals should pay more attention to data protection, pay attention to the privacy of patients, and strictly implement the relevant procedures of data protection. Data sharing requires higher software technology. However, due to the system version of hospital equipment and the overlay area of the Internet, most patient data are still presented in paper form, which cannot be shared between hospitals. (3) Medical insurance payment is not universal. App, such as wechat and Alipay, improves the efficiency of outpatient service, and alleviates the difficulties of registration and long queues for payment to some extent. However, few hospitals can carry out app medical insurance payment, which not only needs national policy support, but also puts forward higher requirements for the design and technical level of app, and jointly implements it with the medical insurance office. (4) Imperfect rules and regulations. Because Internet hospitals are not used for physical hospitals, but they are the networking of physical hospitals, rules and regulations applicable to physical hospitals are not applicable to Internet hospitals, so relevant rules and regulations need to be improved, mainly for the review of doctors. (5) tense doctor-patient relationship. The popularity of the Internet is a double-edged sword. On the one hand, people can learn more knowledge through the Internet, which is convenient for medical treatment and consultation. On the other hand, many untrue doctor-patient conflicts are amplified on the Internet,

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and those with ulteristic motives seek profits from it. Medical institutions should set up relevant departments to prevent crisis events, start from the spearhead, regularly conduct questionnaire surveys to each department, correct unreasonable points in time, and stifle risks at the source. In case of medical disturbances, urgent report, timely treatment and control should be carried out to minimize the situation and avoid adverse effects on the hospital.

5. Conclusion

At present, the treatment level of chronic kidney disease in China is limited, so the existing management model of chronic kidney disease has been difficult to meet the needs of the current situation in China. In addition to data monitoring and treatment for patients, medical staff should give patients guidance from an all-round and multi-angle, pay attention to the patient's psychological level, diet and exercise guidance and treatment, through continuous communication with patients, close the doctor-patient relationship, conducive to the collection of data (patient medical records). Through data analysis, the risk assessment and early warning of patients with chronic kidney disease are carried out, and a reasonable diagnosis and treatment plan is formulated. From the perspective of "preventive treatment" of traditional Chinese medicine, effective scientific prevention is the starting point for the treatment of chronic kidney disease. It is believed that in the near future, the research of Internet hospitals in chronic kidney disease management will become the mainstream direction of chronic kidney disease management, bringing new hope for the prevention and treatment of chronic kidney disease.

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