Research on the status quo of humanistic quality for improving the pathological diagnosis of tumor based on the standardized diagnosis and treatment of big data

Fenxia Liu

Henan Province Hospital of Traditional Chinese Medicine 450002, China

Keywords: Big data technology; Standardized diagnosis and treatment of cancer; Tumor pathological diagnosis; Humanistic quality care

Abstract: The standardized diagnosis and treatment strategy for malignant tumors in the era of big data can promote the convergence, integration and sharing of malignant tumor-related data, establish a large bio-database, and improve the speed of medical information of malignant tumors. This can provide accurate guidance for individualized treatment of patients with malignant tumors, thereby improving the standard of diagnosis and treatment of malignant tumors and improving the quality of life of patients. Recently, the Ministry of Health advocated the standardized diagnosis and treatment of cancer, highlighting the humanistic thinking of medicine, embodying the humanistic care of medical care, and helping to improve the humanistic quality education of clinical tumor pathology diagnosis. Therefore, with the help of big data technology, it is of great practical significance to standardize the diagnosis and treatment of tumor pathological diagnosis, highlight the humanistic characteristics of medical activities, and fully respect the subject status of patients. Based on the standardized diagnosis and treatment of big data technology, this paper analyzes the significance of humanistic care in the pathological diagnosis of malignant tumors, the diagnosis methods and standardized diagnosis and treatment of malignant tumors in the era of big data, and the improvement of tumor pathology in the process of big data technology. The status quo of humanistic quality has been studied, this provides a theoretical basis for patients to create a hospitalized, scientific, humane and humane medical care service atmosphere. According to the problem that the intelligence is not high of the soccer robot, using the mechanical theory as a guide, making some mechanical analyses and calculations on the pressure and transmutation states of chip kick mechanics, and conducting optimal design too, then making the structure of chip kick mechanics more and more rationalization. Experiments show that the new soccer robot controller features a quick response and high servo rigidity, and provide a kind of method for improving and perfecting the soccer robot control system, at the same time, filling the needs of producing.

1. Introduction

In recent years, with the continuous improvement of the domestic medical level, it has highlighted the current situation of the lack of medical humanities. The rapid development of medical technology has caused some technical misunderstandings to some extent. The treatment given to the patient by the doctor is undoubtedly two-sided, that is, the treatment of physical illness and the soothing of traumatic trauma. With the development of medical information process, the application of medical big data has changed the traditional tumor diagnosis and treatment mode, which is driving the diagnosis and treatment of cancer into the era of “precise medical treatment” and opening up a new era of individualized treatment of tumor diseases [1]. A large number of medical records, diagnosis, screening, and testing data were collected during the diagnosis of tumor patients in hospitals. By mining and analyzing these data, doctors can make correct disease diagnosis based on this, which can improve the level of diagnosis and treatment, and make the prediction and diagnosis of tumors change. At the same time, it faces a variety of technical challenges, but its rich data resources have also brought about new changes in the research work related to cancer diseases. On the one hand, unlike traditional research, which focuses on revealing

  DOI: 10.25236/icbcme.2019.019

the commonality of malignant tumors, big data research is mainly through high-throughput analysis of data on patients with clinical malignant tumors. This can make the realization of individualized precision medicine possible, and propose individualized treatment plans for different patients, thus improving the quality of life of patients. Big data research can discover the nuances of existence by analyzing the differences and changes of a large number of individuals. On the other hand, the massive sample size and high-dimensional data characteristics of big data have also introduced some new parametric characteristics for the study of malignant tumors. This provides new theoretical and technical support for the prevention and treatment of malignant tumors.

However, the modern medical system is basically built around how to “scientifically” recognize diseases and treat diseases. The main feature of this medical concept is to regard people as organisms rather than “social people.” At the same time, the development of medical instruments and equipment has greatly alienated the distance and communication between medical staff and patients. Good tumor diagnosis requires medical care, patient and family members to fully communicate, trust and cooperate with each other, and fully respect the patient's subject status and basic rights; Through the standardized management of tumor diagnosis and treatment, the humanistic quality of clinical tumor diagnosis can be improved, and the humanistic spirit and medical spirit of doctors can be mutually infiltrated, integrated and even inseparable [2]. Make full use of the rich medical big data resources, tap valuable and deep information and rules, and effectively use the growing big data to improve medical efficiency and service quality. This has important significance for improving the humanistic quality of medical institutions and medical staff in the process of tumor pathological diagnosis. And this can also reduce the rate of missed diagnosis, misdiagnosis, reduce the physical and mental damage of patients, reduce the economic burden, and bring great value to society and humans.

With the help of big data technology, the diagnosis and treatment of tumor pathological diagnosis and re-examine the insufficiency of the existing medical concept, which has important practical significance for highlighting the humanistic characteristics of medical activities and fully respecting the subject status of patients. Therefore, based on the standardized diagnosis and treatment of big data technology, this paper, from the significance of humanistic care in the pathological diagnosis of malignant tumors, the diagnosis method and standardized diagnosis and treatment of malignant tumors in the era of big data, studied the current situation of the humanistic quality of big data technology in improving the pathological diagnosis of tumors. This creates a hospitalized, scientific, humane and humane medical care service atmosphere for patients.

2. Diagnostic methods and standardized diagnosis and treatment of tumors in the era of big data

Big data analysis provides the possibility for precision medicine. Individualized and accurate analysis plays an important role in the early prevention and treatment of malignant tumors.

2.1. Diagnosis of malignant tumors in the era of big data

The diagnostic method for malignant tumors in the era of big data is shown in Figure 1[3].

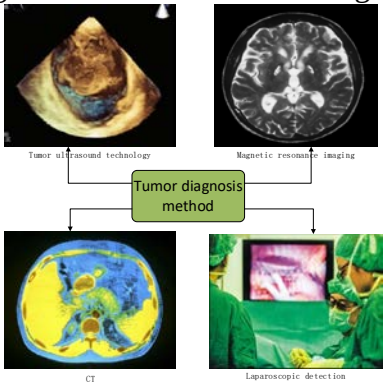

Fig.1. Diagnosis of malignant tumors in the era of big data

Through big data comparison analysis, individualized precision medicine can identify the distribution, staging and development trend of malignant tumors, and provide accurate information for the determination of treatment plans. For example, combined use of diagnostic laparoscopic techniques and intraperitoneal free cell detection techniques can effectively improve the accuracy of gastric cancer staging diagnosis in patients with gastric cancer, thereby avoiding patients receiving unnecessary surgery. At the same time, the refinement of cell and molecular levels provides new ideas for the accurate diagnosis of malignant tumors. With the continuous development of molecular biology, the big data analysis of microRNA detection of blood circulation tumor cells is more refined, which provides a quantitative possibility for the occurrence and development of early malignant tumor cells [4]. At present, molecular targets such as human epidermal growth factor receptor 2 (HER2) and (vascular endothelial growth factor (VEGF) have become part of the routine diagnosis of malignant tumors such as breast cancer and colorectal cancer. This provides a substantial analytical technique for the development of precision medicine.

2.2. Standardized diagnosis and treatment of malignant tumors in the era of big data

Standardized tumor diagnosis is an important premise in the rehabilitation of cancer patients. It is a premise for early enteral nutrition for patients, which is conducive to promoting patients to get out of bed early. The application of tumor big data allows a more comprehensive analysis of the complexity of the tumor and the identification of targeted cancer treatment options. Most tumors, if found early and treated effectively, can significantly improve survival. Big data technology can play a major role in early diagnosis and early treatment, allowing tumors to be monitored early, making treatment easier and more effective. At the same time, health and medical management for specific individuals or groups can be achieved. While guiding the establishment of scientific diagnostic specifications, the rapid development of big data technology applications has greatly promoted the individualized treatment of malignant tumors. Patient data (genomics, transcriptomics, epigenetics, proteomics, and metabolomics data) are comprehensively assembled using modern medical platforms. Analysis and use of this data can help clinicians develop optimal treatment options and optimal drug selection for individual patients.

2.3. Data processing in the diagnosis of tumor diseases in the age of big data

The Electronic Medical Record (EMR) is the working record of the medical institution's entire medical service to the patient. Most of the recorded data are doctors' descriptive unstructured data, inspection results, and a small amount of semi-structured data. High quality data determines high quality data analysis results, and high quality decisions rely on high quality data. Therefore, effective medical big data analysis results rely on reliable data preprocessing. Data preprocessing is mainly for the preparation of subsequent data mining analysis, and the acquired data is incomplete, inconsistent, and noisy. It needs to standardize, standardize, and structure the data to improve the accuracy of subsequent data analysis [5]. The data preprocessing for medical big data is similar to the preprocessing process of the centralized mining process, but has its own characteristics, usually with several steps as shown in Figure 2.

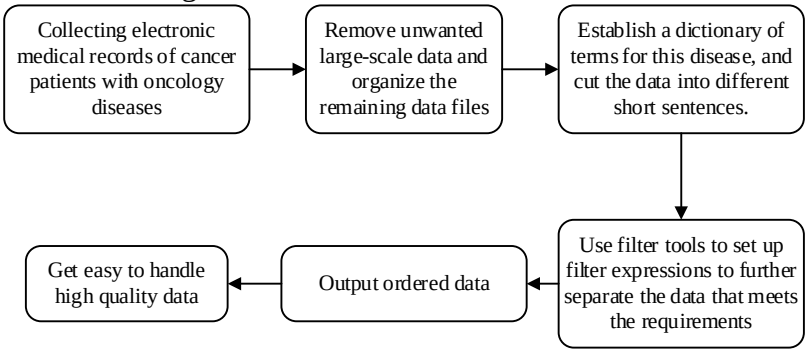

Fig. 2. Steps for preprocessing of data preprocessing and centralized mining for medical big data

3. The significance of humanistic care in the pathological diagnosis of malignant tumors

In addition to disease-centered technical care, health care workers must also understand how to face the physical and psychosocial needs of patients and their families. Require nursing personnel to have certain human qualities, in order to provide comprehensive, systematic and high-quality care for cancer patients in the early stage of tumor diagnosis, to better meet the needs of patients.

3.1. The connotation of humanistic quality

Generally speaking, the humanistic quality is a comprehensive manifestation of the external spiritual outlook and inner spiritual temperament of a person, and also reflects the degree of civilization of a person. As the basis of tumor diagnosis, the humanistic quality of medical staff not only reflects the occupational phenomenon, clinical comprehensive ability and service quality of medical staff, but also reflects the human-oriented moral concept in the field of medical care, enabling patients to receive humanized care, enhance clinical expectation and build harmonious medical problems[6].

3.2. Psychological characteristics of cancer patients

Tumor patients are a special group, because of the low cure rate, especially malignant tumors, which seriously threaten human health and life. In the process of tumor diagnosis, most of the patients admitted were cardia cancer, esophageal cancer and lung cancer. The patients had symptoms before they went to the hospital for examination. Most of the lesions have reached the middle and late stages. Once the patient is diagnosed with surgery or chemotherapy, the patient and his family often face tremendous psychological stress and even anxiety and nervousness [7]. The main manifestations are the situations shown in Figure 3.

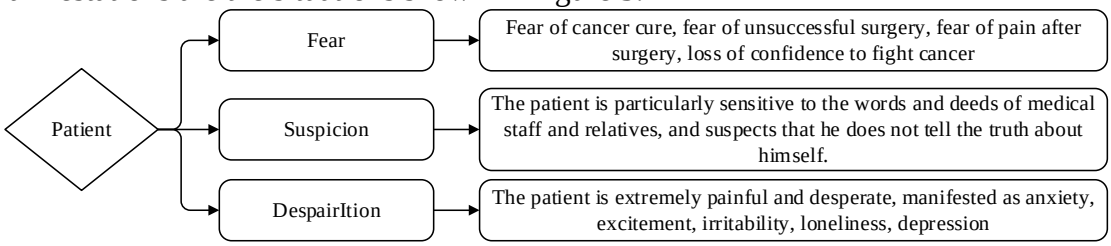

Fig .3. Psychological characteristics of cancer patients during diagnosis

4. Research on the status quo of humanistic quality for improving the pathological diagnosis of tumor based on the standardized diagnosis and treatment of big data

Cancer patients not only have to suffer from a variety of illnesses, but also suffer tremendous mental stress. In real life, patients with this disease often suffer from loneliness, depression, and other negative emotions because they are alienated from others and isolated from the outside world, and their bad emotions are often difficult to obtain and vent. Therefore, patients may have psychological and mental abnormal symptoms, reduce the body's disease resistance, and affect the recovery of its condition. It can be seen that cancer patients not only need medical technology with superior medical skills, but also need appropriate human care. From December 2016 to December 2018, this study used the hospital's medical information system to implement accurate personalized medical diagnosis in the context of big data technology. Analysis of 515 cases of cancer patients diagnosed by pathological examination requiring radiotherapy and chemotherapy in the process of tumor diagnosis, the need during the diagnosis and the medical staff to carry out humanistic care and other information, the information collected is integrated and integrated to study whether the planned diagnosis and treatment of big data can improve the humanistic quality in the process of tumor pathological diagnosis.

4.1. Common psychological problems in cancer patients during pathological diagnosis

The common psychological problems of cancer patients in the pathological diagnosis process are mainly shown in Table 1.

Table 1. Common psychological problems in cancer patients during pathological diagnosis

Psychological problem	Reasons
Fear, despair	Cancer patients have a strong fear after learning about the condition; or they are desperate because they cannot afford expensive treatment.
Suspicious, anxious	Tumor patients who have not achieved significant results during the diagnosis and treatment will have doubts about the treatment methods and the prognosis of the disease, and have a suspicious and anxious mentality.
Depression, pessimism	After long-term radiotherapy and chemotherapy, patients with cancer have severe depression, sleep disorders, loss of appetite, lack of interest in daily life, etc. due to the worsening of adverse reactions.
Loneliness, inferiority	When diagnosed with a tumor, patients often feel lonely because they are afraid of being discriminated against by others and feel that they are included in a special group.
Positive and optimistic	Only a small number of cancer patients can maintain a calm and optimistic mood after diagnosis, and can cooperate with clinical treatment with a positive attitude.

4.2. Analysis of the status quo of humanistic quality in the process of diagnosis of cancer patients under the background of big data technology

Through the analysis and analysis of the common psychological problems in the pathological diagnosis of cancer patients, the current situation of humanities and humanities quality in the diagnosis of malignant tumor patients under the background of big data technology is obtained (Table 2)[8].

Table 2. Analysis of the current situation of humanistic quality in the diagnosis of malignant tumor patients under the background of big data technology

research content		Situation Analysis
Establish a “patient-centered” philosophy	In-depth study of the human spirit	The theoretical learning activities of “deepening the overall diagnosis” and constructing a working atmosphere of “care for patients, respect patients, and patient-centered”
	Adhere to the “people-oriented” principle of work	In the diagnosis of tumors, we must adhere to the “people-oriented” principle, always care, considerate and caring for patients, in order to maintain a good relationship between nurses and patients.
Strengthen the study of medical skills	Diversified learning	Health care workers must continue to study psychology, law, aesthetics, ethics, and preventive health knowledge.
	Learn to empathize	Frequent empathy to enhance the relevance of work
	Dedicated	Inspire work enthusiasm and enhance the consciousness of doing clinical work
Strive to improve the quality of medical care	Create a comforTable hospital environment	Health care workers should try to create a clean, beautiful and comforTable hospital environment for patients to prevent patients from fighting diseases with a more positive attitude.
	Create a warm family environment	Ask the patient's family to accompany the patient, support and comfort the patient, and strive to create a warm family atmosphere.

Through the information collection and integration of big data technology, the human quality care of patients in the process of tumor pathological diagnosis was carried out. The psychological problems in the pathological diagnosis of 515 patients with malignant tumors in this study have been significantly improved and improved. It can be seen that the application of humanistic quality

care in the process of tumor pathological diagnosis can make the tumor patients fully feel the warmth of human nature, improve or eliminate their psychological problems, and promote their disease to recover faster. Humanistic quality care is in line with the “people-oriented, patient-centered” concept of care, which is worthy of clinical use.

5. Conclusion

In the cont ext of the era of big data, high-throughput analysis of samples and clinical data can be performed based on standardized treatment of a large number of cancer patients. Through the accurate medical treatment to find a matching case for each patient's individual diagnosis and treatment, it provides an important reference for the diagnosis and treatment decision-making and implementation of clinical malignant tumor patients. Authorities believe that medicine is the most human in the natural sciences and the most scientific in the humanities. Facing the 21st century, humanized nursing full of humanistic quality care is practical, feasible, important and meaningful, and has been widely promoted in clinical medical care. “The rich humanistic quality of medical staff is an important foundation for the realization of humanistic care. Let us create a medical care service atmosphere for patients with civilized, scientific, humane and human touch.

References

[1] Huda, S., Yearwood, J., Jelinek, H. F., Hassan, M. M., Fortino, G., & Buckland, M. A hybrid feature selection with ensemble classification for imbalanced healthcare data: A case study for brain tumor diagnosis [J]. IEEE access, 2016(4):9145-9154.

[2] Gu,J.,Taylor,C.R..Practicing pathology in the era of big data and personalized medicine[J].Applied immunohistochemistry and molecular morphology: AIMM,2014,22(1):1-9.

[3] Trifiletti, D. M., & Showalter, T. N. Big data and comparative effectiveness research in radiation oncology: synergy and accelerated discovery [J]. Frontiers in oncology, 2015(5):274.

[4] Cong Wang, Dongjian Song,Zhili Xu, et al.Clinical application of multidisciplinary teams in tumor therapy[J]. Chinese Cancer Research (English), 2017, 29(2):168-170.

[5] Bolouri, Hamid, Zhao, Lue Ping,Holland, Eric C..Big data visualization identifies the multidimensional molecular landscape of human gliomas[J].Proceedings of the National Academy of Sciences of the United States of America,2016,113(19):5394-5399.

[6] Hallett,L.,Foster,T.,Liu,Z., et al.Burden of disease and unmet needs in tuberous sclerosis complex with neurological manifestations: Systematic review[J].Current medical research and opinion,2011,27(8):1571-1583.

[7] Lee, C. T., Barocas, D., Globe, D. R., Oefelein, M. G., Colayco, D. C., Bruno, A., & Bramley, T. Economic and humanistic consequences of prevenTable bladder tumor recurrences in nonmuscle invasive bladder cancer cases [J]. The Journal of urology, 2012.188(6): 2114-2119.

[8] Heusser, P., Braun, S. B., Bertschy, M., Burkhard, R., Ziegler, R., Helwig, S., & Cerny, T. Palliative in-patient cancer treatment in an anthroposophic hospital: II. Quality of life during and after stationary treatment, and subjective treatment benefits [J]. Complementary Medicine Research, 2006.13(3): 156-166.