Malignant tumors are one of the leading causes of death in the world. According to the latest GLOBOCAN data issued by the World Health Organization (WHO), there were 12,700,000 new cases of tumors in 2008, of which 7,600,000 resulted in death, accounting for 13% of all the deaths due to various diseases.¹ Research on the treatment of tumors has been continuous, and with the development of science and technology, currently our understanding of the biological characteristics of tumors has been deepened to molecular level. Continuous emergence of new drugs and unceasing upgrade of therapeutic concepts marked considerable progress in the prevention, early diagnosis and treatment of tumors. In China, Chinese medicine (CM) provides a powerful arsenal to fight against tumors, CM can be well applied to the onset and progression of tumors in China, bearing the characteristics of multi-target, multi-phase and multi-effect. But there are also many problems demanding urgent attention in the use of CM. Some most debated problems in this field were summarized. We should upgrade our concepts in using CM, find its position scientifically, and establish evidence of its effect by high quality clinical research.

**KEYWORDS**  malignant tumors, Chinese medicine, integrated traditional and Western medicine

**PROGRESS**

Modern research on the prevention of tumors is manifesting its effects. It is estimated that at least one third of all tumors are preventable, with tobacco, obesity, alcohol abuse and environmental pollution being the primary contributory factors of tumors. Of all the intervention strategies, prevention is the most cost-effective. For example, after a half century’s tobacco control, during the 10-odd years from 1991 to 2003, the mortality rate of lung cancer among American men decreased by 20%² while the annual incidence decreased by 1.8%.³ Secondary prevention among high risk populations is a key area of research, usually yielding satisfactory outcomes. For instance, some North European countries like Holland conducted earlier secondary prevention of cervical carcinoma, resulting in an 80% decrease of its mortality rate, the experience of which had been
confirmed by Chinese researchers. In Qidong City, Jiangsu Province, with the implementation of early diagnosis and early treatment of liver cancer, 5-year survival rate of this cancer in that area has increased from 2.2% in the 1970's to 10.0% currently.\(^4\)

Modern medical imaging and molecular biology have greatly facilitated the early diagnosis and treatment of tumors. For example, spiral computed tomography (CT), nuclear magnetic resonance imaging (MRI) have been widely applied to the early detection of tumor. Positron emission tomography (PET), as a novel molecular imaging technology, currently is the most sensitive approach to obtain the metabolic data of a tumor. It is the most reliable noninvasive method to determine the malignancy or benignancy of a tumor, not only displaying the relationship between the tumor and surrounding tissues, but also exactly positioning the area where tracer is abnormally concentrated. Research showed an 85% sensitivity, specificity and accuracy of PET-CT in the diagnosis of lung cancer.\(^5\) Endoscopic technologies like endobronchial ultrasound (EBUS), Endoscopic ultrasonography (EUS) have provided an improved method for early diagnosis of lung cancer and pancreatic carcinoma with improved sensitivity, specificity and accuracy. EUS may detect a tumor with a minimum size of 2–3 mm, clearly displaying the relationship between the tumor and neighboring blood vessel, with an 85%–100% agreement rate with the result detected by surgery.\(^6\) Selection of biomarkers is always a heated area in the early diagnosis of a tumor, with more than 1,200 tumor markers reported in the literature till now. The research has transcended traditional serological markers to the level of gene and protein by the use of high-flux technologies, thus selecting tumor markers from blood and body fluid.

Currently, the treatment of tumor has been revolutionized from traditional mode of surgery-plus-radiotherapy-or-chemotherapy to an individualized integrated mode combining anatomy, oncobiology, immunology and other various disciplines. Remarkable progress has been made in the treatment of tumors thanks to the research and development of new chemical drugs and targeted drugs, three dimensional conformal radiotherapy, and surgical technologies, especially minimally invasive procedures. In recent years, the rapid development of tumor molecular biology, tumor immunology, bioinformatics, etc., has opened up immense possibilities and much broader prospects for gene diagnosis, targeted therapy, gene therapy for tumors.

CM, as a unique anti-tumor resource in China, has long been applied in clinical practice, generating numerous achievements with recent deepened research. For example, the anti-tumor effect of arsenic trioxide, a representative of CM, has been evidently confirmed. CM may well be applied to the onset and progression of tumors, bearing the characteristics of multi-target, multi-phase and multi-effect. CM plays a significant role in the inhibition and elimination of tumor cells, alleviation of symptoms, relieving side-effects caused by radiotherapy or chemotherapy, and prolonging the survival time of patients. What's more, CM enjoys the advantages of low adverse reactions, enhancing immunity and low drug resistance. In order to better the utilization of CM in the treatment of tumors, recent years have witnessed great endeavors exerted by researchers of CM and integrated traditional and Western medicine. The exploration of CM in the treatment of malignant tumor has been upgraded from single formula or individual case report, or anti-tumor experiment toward scientific, large-scale clinical applications and research on molecular biological mechanisms.\(^7\)

**CHALLENGES**

Despite the remarkable development, the treatment of tumors still falls short of satisfactory, posing various challenges and problems.

Firstly, the number of tumor patients is increasing year on year. For example, in recent 30 years, the incidence and mortality rates of colorectal cancer in China have increased dramatically. During 1990–1992, a sample survey of 1/10 population showed that the average mortality rate of colorectal cancer was 4.54/100,000, which increased by 28.2% compared to that in 1977 at 3.54/100,000. In 2004–2005, a retrospective sample survey was conducted, which reported that the mortality rate of this cancer further rose to 7.42/100,000, a 63.4% increase compared with that during 1990–1992, with an average annual increase of 4.9%.\(^8,9\) It is estimated that deaths due to tumor will increase constantly, with 9,000,000 deaths in 2015 and 12,000,000 deaths in 2030.\(^10\)

Secondly, there are challenges in bettering