EDITORIAL

Redefining advances in modern oncology research

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Keywords: oncology; research; targeted therapy


I am excited to be the new Editor-in-Chief of Advances in Modern Oncology Research and would like to thank the founding Editor-in-Chief, Dr. Omar Abdel Rahman, for his diligent service to the journal since its inception in 2015. AMOR, the abbreviation commonly used for the journal means “love” in Spanish. As an Open Access journal, I hope that AMOR will be a global platform to disseminate knowledge in modern oncology research from both basic and clinical scientists with a passion to find a cure for cancer.

Modern oncology research spans a spectrum of activities, ranging from studying cancer biology, developing prevention and treatment methodologies, to providing end of life palliative care for patients. Over the last decade, we have witnessed remarkable advances being made in these areas of oncology research. Two emerging hallmarks of cancer – reprogramming of energy metabolism and evading immune destruction – have been recognized as additional biological capabilities acquired during the progression of human tumors[1]. Now, we have a better understanding of the fundamentals of cancer metabolism[2] and various approaches targeting cancer metabolism for clinical applications are emerging[3]. The Cancer Genome Atlas Project and the International Cancer Genome Consortium have generated vast amounts of data that are being used to discover new therapeutic targets and biomarkers in the era of precision medicine[4,5]. Cancer patients treated with targeted therapies and immunotherapies continue to show impressive response to treatment[6]. When patients' tumors with targetable genetic alterations were treated with matched therapies, more frequent remissions and longer survival periods were observed[7]. For example, several immune checkpoint inhibitors have been shown to prolong survival in stage III melanoma[8] and are being extended to non-small-cell lung cancer, urothelial cancer and head and neck squamous cell carcinoma[9,10]. In 2016, the US Food and Drug Administration (FDA) has added 7 new drugs and biologic therapies to its list of more than 195 approved anticancer agents and expanded the use for 8 previously approved treatments[11]. However, the intrinsic and acquired resistance to targeted cancer therapies remains a challenge to clinicians and researchers alike.

Significant strides have been made in developing preventive measures and the usage of human papillomavirus vaccine to prevent cervical cancer[12] stands out as a prime example in this area of research. Many other immunopreventive methods for precision medicine are also being tested[13,14]. Apart from therapeutic treatment, the definition of cancer care has been expanded to include the physical, nutritional, emotional and psychosocial needs of the patient. The discussion on life expectancy/prognosis between cancer patients and their care providers have enhanced the understanding of the illness in patients with advanced cancer[15]. While not all advances in modern oncology research can be mentioned here, what we have witnessed so far has been truly impressive.
Another recent advance in the arena of diagnosis and development of companion assay for precision medicine is liquid biopsy. Many investigators have reported the ability to isolate circulating, cell-free tumor DNA from the plasma of cancer patients for characterization with deep sequencing. A liquid biopsy is not only safer and more convenient than traditional tissue biopsy, but may also provide more information on heterogeneity of tumors found in different sites within the same patient. Testing of EGFR mutations in patient plasma has recently been approved as a companion assay to identify non-small cell lung cancer patients who may benefit from osimertinib and erlotinib treatment. This new approach of using liquid biopsy will benefit patients who have difficulty providing tumor specimens. The future development of liquid biopsies especially for bone and brain tumor patients will have a significant impact on patient care. The Blood Profiling Atlas in Cancer (BloodPAC) Consortium has recently been launched to speed up the development and validation of liquid biopsy to improve diagnosis and precision treatment. We all look forward to the development of proven liquid biopsy to improve patient care.

Cancer is not a single disease and will continue to be a major challenge globally. In the next two decades, the World Health Organization projects that the number of new cancer diagnoses will reach 22 million per year from 14 million new cases with 8.2 million deaths in 2012. Most of these cancer deaths will occur in Africa, Asia, and Central and South America, regions of the world with limited access to cancer screening and treatment. Understanding the role of ethnicity, lifestyle and environmental factors along with genomic information will be the key to future oncology research. To tackle the high toxicity and extremely high cost associated with current targeted therapies, an international task force of 350 scientists from 31 countries has launched the “Halifax Project”. The aim of this project is to explore the concept of a “broad-spectrum” prophylactic and therapeutic approach of using low-cost and low-toxicity chemicals from plants or foods that could simultaneously target many key pathways and mechanisms.

As an Open Access journal, I welcome reviews, case studies, and research articles in any area of oncology research from our international colleagues. The diversity of the editorial board members clearly shows a global effort to attack the complexity of cancer challenges and to take advantage of opportunities that lie ahead of us. With a highly effective editorial office team and your support, I look forward to taking this journal to the next level.

Conflict of interest

The author declares no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

References


