

Physical methods in palliation

Cancer is a major public health problem in the world, accounting for about one in four deaths. In the United States in 2013, there were 1,660,290 new cancer cases and 580,350 cancer deaths in estimation (1). With the progress of medical technology, cancer death rates have decreased from their peak in 1991 (215.1 per 100,000 population) to 173.1 per 100,000 population in 2009. A total of 13.7 million cancer survivors are estimated in the US now, and this number may rise to almost 18 million by 2022. The main goals of a cancer diagnosis and treatment are to cure, to prolong the survival, or to ensure the best quality of life to cancer survivors although not amenable to early screening, such as metastatic seminoma, acute lymphatic leukemia in children, breast cancer and advanced lymphomas. The common cancer treatment modalities include surgery, chemotherapy, and radiotherapy. Surgery alone, and sometimes radiation alone, has high success for localized and small tumor. Chemotherapy alone can be effective for a small number of cancers, such as haematological neoplasms (leukemias and lymphomas). In addition, pain exists in about 60% of cancer patients during treatment and persists for one third of them even after the treatment. Shrinking a tumor and reducing pressure on nerves or surrounding tissues can reduce pain. Because of the anatomically difficult location of cancer or presence of metastasis or the tumor invasion to vessel or lymph node as most of them are diagnosed at late stage or tumor resistance to radio- or chemo-therapy, cancer therapeutic modalities may not be available for some patients. For example, only 15-20% of patients with advanced pancreatic cancers can undergo surgery, and the efficacy of radio- and chemo-therapy is limited for pancreatic cancer. Thus, palliative therapy is the only option, which would control or reduce symptoms caused by advanced cancer and improve quality of life. Common physical symptoms include pain, progressive fatigue, loss of appetite (anorexia-cachexia syndrome), nausea, vomiting, shortness of breath, and insomnia, nausea and vomiting, low blood counts, and diarrhea. Palliative modalities include medicines, nutrition therapy, physical therapy, deep breathing techniques, relaxation techniques, emotional support, chemotherapy, radiotherapy, hormone therapy, biological therapy, radiofrequency ablation, and cryotherapy, similar to those of eliminating the cancer. Cancer patients may receive both cancer treatment and palliation to ease symptoms simultaneously through all stages of illness. Therefore, development of novel method and large-number well-controlled randomized clinical trials at multiple centers using rigorous evaluation criteria are required to advance the research and application of palliative technologies in order to benefit the growing population of new cancer cases and survivors.

To address this important clinical concern, a special issue of “Physical Methods in Palliation” has been organized by the editorial team of *Annals of Palliative Medicine*. Drs. Stephen Lutz and Candice Johnstone from Department of Radiation Oncology, Blanchard Valley Regional Cancer Center in USA presents their experience of radiotherapy for bone metastases patients while Dr. Andre Konski *et al.* from Department of Radiation Oncology, School of Medicine, Wayne State University in USA, reviews its use for liver metastases. A practical guide for thoracic reirradiation for lung cancer is provided by Dr. Alysa Fairchild *et al.* from Department of Radiation Oncology, Cross Cancer Institute in Canada. Dr. Iruru Maetani from Toho University in Japan shares his experience of self-expandable metallic stent for malignant gastric obstruction. Finally, self-expandable plastic stents and self-expandable metal stents in the palliation of malignant esophageal dysphagia are introduced and compared by two groups: Dr. Yim Heng Boon from Gastroenterology liver and endoscopy center in Singapore and Dr. T. Sabharwal *et al.* from Guy’s and St. Thomas Hospital in UK. Greek group led by Dr. Evanthia I. Botsa at Department of Medical Imaging and Interventional Radiology, Gneral Hospital of Chest Disease “Sotiria” summarize the thermal ablation for palliation of painful bone metastases under the guidance of CT image.

Here, we would like to present our sincere appreciation to authors’ contribution, time, and expertise. Editorial office of *Annals of Palliative Medicine* has already made great effort in organizing such a special issue with significant enthusiasm, professionalism, and attention. Finally, the gratitude is to be given to Molly J. Wang and Nancy Q. Zhong. Without their hard work, this issue will not be released in such a perfect shape.



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