

Colorectal Cancer: Perspectives on Treatment, Survivorship, and Outcomes

Colorectal cancer is a critical health problem in the United States, with an estimated 150,000 new cases diagnosed per year and accounting for close to 50,000 deaths annually. The management of colorectal cancer, particularly rectal cancer, requires a highly integrated multidisciplinary approach characterized by collaboration between specialists such as surgical, medical, and radiation oncologists. Significant technological and conceptual advances are being made in each of these fields that are contributing to the enhancement of interdisciplinary care for colorectal cancer patients.

This issue of *Cancer Control* includes reviews of the cutting-edge developments in the fields of minimally invasive surgery, radiation technology, and targeted biologic agents that are being applied to the treatment of colorectal cancer. Because these new technologies have resulted in a greater number of survivors, this issue also includes articles that address the important and unique challenges of colorectal cancer survivorship.

Over the course of almost 30 years, from the 1970s to the late 1990s, 5-fluorouracil remained the mainstay of the chemotherapeutic treatment of colorectal cancer patients in both the adjuvant and metastatic settings. However, over the past decade we have witnessed a veritable boom of not only additional conventional-style cytotoxic agents, but also — and perhaps more importantly — new biologic agents that have been designed to hone in on specific cellular tumor targets. Dr Ortega and colleagues provide a comprehensive review of the development of and evidence for the targeted agents in current use and provide a glimpse into other novel agents on the horizon.

Among the most revolutionary advances in surgical technique has been the advent of minimally invasive or laparoscopic surgery. Laparoscopic approaches are now being applied to complex surgical operations that were once thought to be beyond the realm of possibility. Laparoscopic-assisted colon cancer surgery has been extensively studied and is now thought to provide equivalent oncologic outcomes but with enhanced postoperative recovery compared with conventional open procedures. However, as in conventional open approaches, laparoscopic-assisted rectal cancer surgery remains substantially more complex than colon surgery. With ever-improving technology, it appears it is only a matter of time before the minimally invasive approach for rectal cancer is also fully validated. Drs Row and Weiser provide a comprehensive review of the evidence as well as the myriad technical challenges associated with laparoscopic surgery for rectal cancer.

In addition to surgery, a localized treatment modality of significant importance in rectal cancer is radiation therapy. Fundamental areas of consideration with respect to radiation treatment include the optimal delivery of dosage to the area of interest as well as the sparing of exposure and thus toxicity to adjacent normal tissues. Dr Hoffe and colleagues chronicle the enormous strides and enhancements that have been made in recent years not only to existing techniques but also with respect to novel methods of radiation delivery and new approaches to combined chemoradiotherapy. Cutting-edge technologies with relevance to colorectal cancer are reviewed including intensity-modulated radiation therapy (IMRT) and intracavitary high-dose-rate brachytherapy (HDBRT).

With the rapidly progressing and effective diagnostic and therapeutic techniques noted above, treatment successes are becoming more frequent. In contrast to other gastrointestinal malignancies, the number of colorectal cancer survivors is burgeoning. It is estimated that there are well over 1 million colorectal cancer survivors in the United States today. The critical importance of addressing the unique needs of cancer survivors is now just coming to the forefront of the medical community's consciousness. These needs are highly diverse, ranging from the physical to the psychosocial. Dr Faul and coworkers frame the issue of colorectal cancer survivorship and outline important future strategies for study in this area.

Among the most significant quality of life issues among colorectal cancer survivors is that of sexual function. Dr Donovan and colleagues provide a review of the current understanding of the impact of colorectal cancer and its associated treatments on the sexual health of individuals. In particular, the authors highlight the critical underappreciation of alterations in sexual function in female patients as well as strategies for addressing and managing dysfunction in both men and women.

Recently, substantial media coverage has been devoted to the impact of obesity on health and in particular with respect to cancer. A recent presentation at the European CanCer Organisation highlighted statistics suggesting that more than 8% of cancers in Europe are highly associated with obesity. Among the cancer sites with substantial associated risks include postmenopausal breast, endometrial, and colorectal cancer. Similarly, in this country, the National Institutes of Health cites that obesity and being overweight account for up to 14% of cancer deaths in men and 20% of cancer deaths in women. In a timely review, Dr Siegel and coauthors characterize the current knowledge of the association between obesity and colorectal cancer out-

comes and also delve into the postulated biologic mechanisms responsible for this association and directions for future research.

The technological and biological advances made in the treatment of colorectal cancer over the past 10 years have been extraordinary and are clearly leading to therapeutic successes. As a byproduct of such victories, it is becoming increasingly apparent that colorectal cancer survivors have critical unique needs and issues that are not being universally met. The traditional model of a “therapeutic” multidisciplinary panel will need to be supplanted in favor of a diverse team that also includes members who specialize in cancer prevention and survivorship.

An additional report in this issue provides us with an understanding of a current approach utilized in the study of statistics in oncology. Dr Chen and colleagues describe the framework involved in false discovery rate testing to summarize collected data and determine significance cutoff levels among large genetic studies. The authors also provide a clear and thorough description of the structure of statistical hypothesis testing itself.

We hope you will enjoy reading this issue of *Cancer Control* and benefit from the contributions of our expert panel of authors.

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