

Bladder Cancer: One Enemy, Many Fronts

Transitional cell carcinoma of the bladder is the second most common urologic malignancy after prostate cancer. In the fight against bladder cancer, the clinician is confronted with two major clinical situations: first, superficial bladder cancer, which accounts for 80% of bladder cancers at diagnosis, and second, invasive and metastatic bladder cancer.

Bladder cancers present in many forms. Most present at diagnosis as superficial tumors with a tendency to recur but never progress and invade. Others eventually progress to invasive disease. Relatively few present as invasive disease at diagnosis. When invasive, some will be cured with aggressive local treatment, while others will progress with distant metastatic disease. Thus, the disease may be unpredictable and sometimes appears as an insurmountable enemy attacking the clinician and the patient through many fronts.

Recent advances in molecular biology are improving our understanding of the mechanisms leading to the initiation, promotion, and progression of this cancer. These studies provide a more unified understanding of cancer development in the bladder. Newer therapeutic agents may soon be developed based on this understanding so tumors can be attacked at a fundamental level.

In this issue of *Cancer Control*, Ichabod Jung, MD, and Edward Messing, MD, address the molecular pathways involved in malignant transformation and cancer progression. These authors provide a state-of-the-art report on the most current knowledge regarding the interactions of tumor suppressor genes, oncogenes, growth factors, adhesion molecules, and angiogenic factors leading to malignant transformation. They further elaborate on the properties needed for transformed cells to further grow, invade through the lamina propria, and eventually metastasize.

John Seigne, MB, BCh, and I provide a straightforward and practical approach to the recognition and management of superficial bladder cancer based on risk assessment for recurrence and progression. We summarize information of the most common intravesical agents currently available.

Inoel Rivera, MD, and Zev Wajzman, MD, review the current status of bladder-sparing protocols for the treatment of invasive bladder cancer. They conclude that cystectomy remains the standard treatment for invasive bladder cancer, with nonsurgical alternatives limited to select patients or clinical research studies.

Finally, Deepika Parimoo, MD, and Derek Raghavan, MD, PhD,

FACP, FRACP, review the use of systemic chemotherapy in the treatment of invasive and metastatic bladder cancer. Combination systemic chemotherapy with newer agents promises to take us beyond the M-VAC era.

The number of fronts in the war against bladder cancer is decreasing as our knowledge expands concerning the molecular pathways leading to the initiation, promotion, and progression of cancer. We have a better mechanistic understanding of these pathways, and current research is elucidating the molecules pertinent to these pathways.

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