Bladder cancer (BC) is a relatively common cancer that affects a massive number of people in China and around the world. For patients with bladder cancer that has not invaded muscle tissue, treatment consists of surgical removal of the tumor followed by intravesical chemotherapy. Standard treatment for patients with muscle-invasive bladder cancer includes cisplatin-based chemotherapy followed by surgical removal of the bladder or radiation therapy and concomitant chemotherapy. Although treatment for BC has progressed slowly over the past several decades, scientists remain diligent in their efforts to clarify the pathogenesis, detection, and treatment of this disease. A plethora of studies concerning these issues have been recently conducted, and fortunately, recent findings have brought some hope to improving treatment. It is the duty of the professionals in the field to stay apprised of these new discoveries.

Scientist have discovered that many differences exist between normal cells and bladder cancer cells, and they are examining how these differences help cancer cells grow and spread to other parts of the body. Researchers are now looking for genetic changes in bladder cancer cells to help predict patient prognosis. These gene changes might also help doctors choose the best treatment, or be useful in finding bladder cancers that recur after treatment.

Some surgeons are using robotic-assisted surgical system to perform radical cystectomies in which they sit at a control panel in the operating room and use robotic arms to conduct the surgery. Robot-assisted cystectomy has been reported to provide similar oncological outcomes with lower morbidity, and it may shorten the time in hospital and help patients recover faster after surgery. Another key area of research is seeking best use of other treatments along with surgery. Different combinations of chemo-, radio-, and immunotherapy are being used to preserve the bladder.

Researchers are also looking at a number of new medicines to see if putting them into the bladder after surgery can help reduce the risk of non-muscle invasive bladder cancer (NMIBC). The hope is to find some drugs which are better and/or safer than the current options. New drugs are also needed to treat bladder cancer that does not respond to Bacille Calmette–Guérin (BCG) vaccine therapy.

There are a large number of studies looking at new medicines to help treat metastatic BC. Immunotherapy is a novel and promising area of research. Immunotherapy drugs affect the body's immune system to help it fight cancer. New immunotherapy drugs called immune checkpoint inhibitors work by helping the body to attack cancer cells. Indeed, the era of immunotherapy for bladder cancer has arrived. Researchers are currently attempting to determine which people with bladder cancer are more likely to respond well to these immunotherapy drugs based on the genetic makeup. Scientists continue to look for methods to improve the administration of these immunotherapy drugs to have a better effect in patients. This includes combining a checkpoint inhibitor with chemotherapy and testing combinations of checkpoint inhibitors with each other.

According to the data, there are still a large number of patients who die from bladder cancer every year, and scientists are expecting better results in the diagnosis and treatment of BC. In recent years, bladder cancer researches have attracted increased attention to their work, and many new advances in the subfields of bladder cancer treatment have been achieved. The purpose of this book is to bring more attention to these achievements and to the general field of bladder cancer therapy.

Zicheng Xu, MD, PhD
Department of Urologic Surgery,
Jiangsu Cancer Hospital & Jiangsu Institute of Cancer Research
& Affiliated Cancer Hospital of Nanjing Medical University,
Nanjing, China

Ting Xu, MD, PhD
Department of Urologic Surgery,
Jiangsu Cancer Hospital & Jiangsu Institute of Cancer Research
& Affiliated Cancer Hospital of Nanjing Medical University,
Nanjing, China