0.918). The 1997 TNM stage, tumor size, presence of a sarcomatoid component, and nuclear grade were significantly associated with death from clear cell, papillary, and chromophobe RCC. Histologic tumor necrosis was significantly associated with death from clear cell and chromophobe RCC, but not with death from papillary RCC. Our results demonstrate that there are significant differences in outcome and associations with outcome for the different histologic subtypes of RCC, highlighting the need for accurate subtyping.

Editorial Comment

Molecular genetics had an impact on classification of renal cell tumors. The genetic alterations affect the biology of the tumor cells, in respect of proliferation, cell death, differentiation, and cell adhesion; these very properties play a role in determining both the morphology and the behavior of tumors. Most of the pathologists use classifications of renal tumors based on cytomorphologic and genetic characteristics. According to the Heidelberg classification (J Pathol. 1997; 183: 131-3) and the 1997 workshop held in Rochester, Minnesota, USA (Cancer 1997; 80: 987-9) the clasification of renal cell tumors is based on these characteristics. The benign tumors are papillary adenoma (must have < 5mm in greatest diameter), oncocitoma and metanephric adenoma and the malignant tumors are conventional (clear cell) renal carcinoma, papillary renal carcinoma, chromophobe renal carcinoma, collecting duct carcinoma and unclassified cell carcinoma. Sarcomatoid carcinoma is not a particular tumor. Sarcomatoid change has been found to arise in all of the types of carcinoma in this classification, as well as in urothelial carcinoma of the renal pelvic mucosa.

The paper of this editorial comment is a timely study to make valuable this classification for the urologists. The authors studied the prognostic features among the several histologic subtypes of renal cell carcinoma. Patients with clear cell renal cell carcinoma had a poorer prognosis compared with patients with papillary and chromophobe renal cell carcinoma with no significant difference in cancer-specific survival between patients with papillary and chromophobe renal cell carcinoma. The paper also disclosed the need and importance for reporting tumor size, sarcomatoid component, grading and tumor necrosis. Tumor size, presence of a sarcomatoid component, and nuclear grade were significantly asociated with death from clear cell, papillary, and chromophobe renal cell carcinoma. Histologic tumor necrosis was significantly associated with death from clear cell and chromophobe renal cell carcinoma, but not with death from papillary renal cell carcinoma.

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INVESTIGATIVE UROLOGY

Immune mechanisms in bacillus Calmette-Guerin immunotherapy for superficial bladder cancer

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J Urol. 2003; 170: 964-9

Purpose: Of all medical disciplines it is exclusively in urology in which immunotherapy for cancer has an established position today with intravesical bacillus Calmette-Guerin (BCG) against superficial bladder carcinoma recurrences. BCG is regarded as the most successful immunotherapy to date. However, the mode of action has not yet been fully elucidated. We provide a thorough overview of this complex field of research.

Materials and Methods: Rather than simply reporting all experimental data available for better understanding the involved immune mechanisms, we chose to provide comprehensively only information supported by several independent pathways of evidence.

Results: Major findings made during the last few years include systematic analyses of patient material, detailed in vitro studies and investigations in animal models, which have led to a substantially greater understanding of the mechanisms involved.

Conclusions: The efficacy of BCG is based on a complex and long lasting local immune activation. The bladder as a confined compartment, in which high local concentrations of the immunotherapy agent and effective recruitment of immune cells can be achieved, serves as an ideal target organ for this type of immunotherapy approach.

Editorial Comment

Intravesical BCG against superficial bladder carcinoma recurrences is regarded as the most successful immunotherapy to date. However, the mode of action has not been fully elucidated yet. Since the immuno-activating properties of BCG were discovered, investigations have been carried out to ascertain the functional mechanism. All investigations to date have shown that not one single functional mechanism, but a whole series of immunological phenomena are involved.

Doctors Boehle and Brandau, world leading researchers on BCG in superficial bladder carcinoma, present in this article the most recent knowledge on this form of immunotherapy. They describe the major findings made during the last few years when systematic analyses of patient material, detailed in vitro studies and investigations on animal models have led to a substantially greater understanding of the mechanisms involved. This review explains why BCG therapy is currently considered the most successful immunotherapy of solid tumors, and therefore, must be read by every urologist interested in bladder cancer.

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Racial differences in androgen receptor protein expression in men with clinically localized prostate cancer

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Purpose: Black American men experience disproportionate mortality from prostate cancer (CaP) compared with white American men. Differences in outcome may stem from differences within the androgen axis. Since serum testosterone levels appear to be similar by race in men with CaP, we measured and compared androgen receptor (AR) protein expression in malignant and benign prostate tissue from black and white men who underwent radical prostatectomy for clinically localized CaP.

Materials and Methods: Archived radical prostatectomy specimens obtained from 25 white and 25 black men had AR protein antigen retrieved and immunostained. AR protein expression from CaP and benign tissue was assessed by 2 methods. Automated digital color video image analysis was used to measure the

percent area immunostained for AR protein and the intensity of expression (mean optical density). Visual scoring was performed to compare results with automated values.

Results: In black compared with white men malignant nuclei were 27% more likely to immunostain for AR ($p = 0.005$) and in immunopositive nuclei AR protein expression was 81% greater ($p = 0.002$). Visual scoring of malignant nuclei revealed that AR immunostaining was significantly increased in black vs white men (171 ± 40 vs 149 ± 37, $p = 0.048$). In immunopositive benign nuclei AR protein expression was 22% greater in black than in white men ($p = 0.027$). Visual scoring of benign nuclei revealed 20% increased immunostaining in black vs white men, although this difference did not attain statistical significance ($p = 0.065$). Racial differences in AR protein expression were not explained by age, pathological grade or stage, although serum prostate specific antigen levels were higher in black men (9.7 ± 7.5 vs 15.5 ± 12.2 ng/ml, $p = 0.049$).

Conclusions: AR protein expression was 22% higher in the benign prostate and 81% higher in the CaP of black African compared with white men. CaP may occur at a younger age and progress more rapidly in black than in white men due to racial differences in androgenic stimulation of the prostate.

Editorial Comment

Although some controversies still exist, data on age adjusted deaths from CaP obtained from the Surveillance, Epidemiology, and End Results database from 1990 to 1998 in the USA revealed that Black American men have 2.3 times greater mortality from CaP than white American men. Previous works demonstrated that Black men are more frequently diagnosed with higher tumor volume, more advanced tumor stage, higher Gleason grade and higher prostate specific antigen (PSA) levels than white men are. The reasons for such findings are still not well understood.

This is the first study measuring and comparing androgen receptor (AR) protein expression in malignant and benign prostate tissue from black and white men who underwent radical prostatectomy for clinically localized CaP. The authors found that AR protein expression was 22% higher in the benign prostate and 81% higher in the CaP of black compared with white American men. Based on these findings, the authors speculated that CaP might occur at a younger age and progress more rapidly in black than in white men due to racial differences in androgenic stimulation of the prostate.

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RECONSTRUCTIVE UROLOGY

Gastrocystoplasty in patients with an areflexic low compliant bladder

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Eur Urol. 2003; 44: 260-5

Aim: This study was performed with the aim of evaluating gastrocystoplasty as a method of management of patients with an areflexic low compliant bladder.

Patients and Methods: We performed gastrocystoplasty in 30 patients (19 males and 11 females) with an areflexic low compliant bladder. The mean age of the patients was 23.4+/-11 years (range 4-32). The etiology