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The Saudi Clinical Management Guidelines for Urothelial Cell Carcinoma of the Urinary Bladder

National Cancer Center

(NCC)

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Abstract

This is an update to the previously published Saudi guidelines for the evaluation, medical, and surgical management of patients diagnosed with urothelial cell carcinoma of the urinary bladder. It is categorized according to the stage of the disease using the tumor node metastasis staging system 7th edition. The guidelines are presented with supporting evidence level, they are based on comprehensive literature review, several internationally recognized guidelines, and the collective expertise of the guidelines committee members (authors) who were selected by the Saudi Oncology Society and Saudi Urological Association upon the request and the support of the National Cancer Center (NCC). Considerations to the local availability of drugs, technology, and expertise have been regarded. These guidelines should serve as a roadmap for the urologists, oncologists, general physicians, support groups, and health care policy makers in the management of patients diagnosed with urothelial cell carcinoma of the urinary bladder.

Key Words: Guidelines, management, Saudi Oncology Society, Saudi Urological Association, urothelial carcinoma

INTRODUCTION

According to the cancer incidence report in Saudi Arabia for the year 2010, there were 243 new cases of urinary bladder cancer accounting for 2.4% of all newly diagnosed cases of cancer. It ranked the 8th and 20th most common cancer in males and females, respectively. It affected 193 (78.4%) males and 50 (20.6%) females with a male to female ratio of 385:100. The overall age-standardized incidence rate was 2.3/100,000, in males it was 3.6/100,000 and in females it was 1/100,000. The median age at diagnosis was 63 among males (range 11–101 years) and 64 among females (range 28–97 years).[1]

STAGING

The staging is shown in Appendix 1.[2]

GRADING

The World Health Organization grading of urinary tumors 2004[3] will be used as follow:

- Urothelial papilloma.
- Papillary urothelial neoplasm of low malignant potential.
- Low-grade papillary urothelial carcinoma.
- High-grade papillaryurothelial carcinoma.

PATHOLOGY REPORTING OF BLADDER TUMOR SPECIMEN MUST AT LEAST INCLUDE THE FOLLOWING INFORMATION

- The histological tumor types.
- The presence or absence of lamina propria and muscularis propria.
- The depth of invasion, i.e., pathological T-stage referred to in section 1.
- The presence or absence of carcinoma in situ (CIS).
- The grade of tumor as referred to in section 2.

- Any urothelial carcinoma a variant. [4]

EVALUATION OF BLADDER TUMOR

Evaluation should include history and physical examination, urine cytology, and diagnostic cystoscopy

- If the findings of the diagnostic cystoscopy are suggestive of noninvasive.
- Transurethral resection of bladder tumor(TURBT).
- Single-dose intravesical chemotherapy (mitomycin or doxorubicin) should be considered within 24 h from TURBT to reduce the rate of local recurrence. [5]
- Imaging of the upper tract(ultrasound, computed tomography [CT], or magnetic resonance imaging [MRI] urogram if not already done.
- If the findings of the diagnostic cystoscopy are suggestive of invasive, or high-grade disease.
- Consider imaging(CT scan or MRI) of the abdomen and pelvis before TURBT(EL3) [6,7]
- Examination under anesthesia and TURBT.

MANAGEMENT OF NONMUSCLE INVASIVE UROTHELIAL BLADDER CARCINOMA

Repeat TURBT within 2–4 weeks is indicated if incomplete resection, high-grade, pathological T1, or there is no muscle in specimen. [8-10]

Risk stratification for nonmuscle invasive urothelial bladder carcinoma

This depends on the following factors: Tumor stage, grade, presence of CIS, number of tumors, tumor size, and prior recurrence rate: [11]

- Low -risk nonmuscle invasive bladder cancer(NMIBC) (solitary small volume, low-grade Ta)

- Intermediate risk NMIBC (multifocal and/or large volume low-grade Ta, recurrence at 3 months)
- High-risk NMIBC (high-grade Ta, all T1, CIS).

Low-risk

- Surveillance cystoscopy (3–6 months) intervals [Appendix 2].

Intermediate-risk

- Adjuvant intravesical (6-week induction) bacillus Calmette–Guerin (BCG) (preferred) or mitomycin [12] •Surveillance cystoscopy and cytology (3–6 months) intervals
- Upper tract imaging every 2 years or as indicated.

High-risk including carcinoma *in situ*

- Adjuvant intravesical BCG [6-week induction followed by maintenance see Appendix 3] [13,14]
- Close surveillance cystoscopy, cytology, and upper tract imaging.
- Consider early cystectomy in selected patients. [15]

Recurrence of nonmuscle invasive disease

- TURBT
- Adjuvant intravesical therapy if not given before or as a second induction. [16]
- If two induction of adjuvant intravesical therapy was given before, then consider changing the intravesical therapy.
- Consider early cystectomy in recurrent CIS, T1, and high-grade disease with prior treatment with no more than two inductions of intravesical therapy. [17,18]

Positive urine cytology without gross evidence of disease

- Multiple biopsies of the bladder and prostatic urethra. [19-21]
- Upper tract imaging (CT or MRI urogram, or retrograde pyelogram).
- Ureteroscopy if suspicion of upper tract tumor.

MANAGEMENT OF MUSCLE INVASIVE UROTHELIAL BLADDER CARCINOMA

Staging should include complete blood count, renal function and serum electrolytes, liver function test including alkaline phosphatase, imaging of the chest, abdomen, and pelvis (CT or MRI), bone scan if elevated alkaline phosphatase or symptoms of bone pain. [22]

Clinical T2–T4a disease with negative lymph nodes

- Neoadjuvant cisplatin-based combination chemotherapy. [23-25]
- Considered in clinical T2.
- Strongly recommended in clinical T3.
- Radical cystectomy with extended lymphadenectomy.

  (Open, laparoscopic, or Robotic) is considered the standard treatment. [26]
- Bilateral pelvic lymphadenectomy should be performed and include at a minimum common, internal and external iliac, and obturator nodes.
- Bladder preservation with tri-modality combination of maximum TURBT followed concurrent chemo radiation with early radical cystectomy in failure is an alternative to upfront radical cystectomy [26-31] in selected patients with solitary disease, no CIS, no hydro nephrosis, normal renal function, and adequate bladder capacity. [32]

- In patient undergoing bladder preservation, early evaluation is recommended after 45 Gy, if there is residual/recurrent tumor than consider cystectomy and if there is the complete response then complete radiotherapy to 60–65 Gy total dose. [33]
- Patients who are not candidate for radical treatment, consider TURBT and/or palliative radiotherapy.
- After surgery with positive lymph nodes or pathological T3 or T4 disease, consider adjuvant cisplatin-based combination chemotherapy if no neoadjuvant was given. [34]

Clinical T4b or positive loco regional lymph node disease

- Cisplatin-based combination chemotherapy or chemo radiation.
- Reevaluate the response during the treatment with imaging and/or TURBT.
- If chemo radiation was used:
- Observation for patients who achieved complete response.

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- If partial response consider cystectomy.
- If cisplatin-based combination chemotherapy was used:
- In responding patients, consider cystectomy or chemo radiation
- In nonresponding patients, consider chemo radiation.

Metastatic disease

- Chemotherapy is the mainstay of treatment.
- Patients with normal renal function and fit for chemotherapy (PS 0–2) are treated with combination cisplatin and gemcitabine for a maximum of 6 cycles. [35]

- Patients with decreased renal function and/or unfit (PS 3) are treated with combination of Carboplatin and gemcitabine or single agent gemcitabine or carboplatin. [36]
- Patient who relapse or progress on the above regimens may be given vinflunine or taxanes as second-line chemotherapy.
- Patients who present with local recurrence may benefit from palliative radiation therapy.
- Consider clinical trials.

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APPENDIX

Appendix 1: Tumor, node, metastasis staging

Primary tumor (T) TX Primary tumor cannot be assessed

T0 No evidence of primary tumor

Ta Noninvasive papillary carcinoma

Tis Carcinoma in situ: “flat tumor”

T1 Tumor invades sub epithelial connective tissue

T2 Tumor invades muscularis propria

PT2aTumor invades superficial muscularis propria (inner half)

PT2bTumor invades deep muscularis propria (outer half)

T3Tumor invades perivesical tissue pT3a microscopically pT3bmacroscopically

(extra vesical mass)

T4Tumor invades any of the following: Prostatic stroma, seminal vesicles, uterus, vagina, pelvic wall, abdominal wall

T4aTumor invades prostatic stroma, uterus and vagina

T4b Tumor invades pelvic wall, abdominal wall

Lymph nodes: Regional lymph nodes include both primary and secondary drainage regions. All other nodes above the aortic bifurcation are

considered distant lymph node

Regional lymph nodes (N)*

NX	Lymph nodes cannot be assessed
N0	No lymph node metastasis
N1	Single regional lymph node metastasis in the true pelvis (hypogastric, obturator, external iliac, or presacral lymph node)
N2	Multiple regional lymph node metastasis in the true pelvis (hypogastric, obturator, external iliac, or presacral lymph node metastasis)
N3	Lymph node metastasis to the common iliac lymph nodes

Distant metastasis (M)

M0	No distant metastasis
M1	Distant metastasis

Anatomic groups	**stage/prognostic**		
Stage 0a	Ta	N0	M0
Stage 0is	Tis	N0	M0
Stage I	T1	N0	M0
Stage II	T2a	N0	M0
	T2b	N0	M0
Stage III	T3a	N0	M0
	T3b	N0	M0
	T4a	N0	M0
Stage IV	T4b	N0	M0
	Any T	N1-3	M0

Any T Any N M1

Appendix 2: Suggested follow up schedule for nonmuscle invasive disease

3 months	6 months	9 months	12 months
Year1 Cystoscopy 2 and Urine cytology	Cystoscopy Urine cytology	Cystoscopy Urine cytology	Cystoscopy Urine cytology Upper tract imaging
Year3,Cystocopy 4, 5 Urine cytology		Cystoscopy Urine cytology Annual upper tract imaging	

Consider prolonging the intervals and omitting upper tract imaging after the first year for low-risk disease

Appendix 3: Induction and maintenance schedule for adjuvant intravesical BCG treatment in nonmuscle invasive disease, 12 months for intermediate-risk, and 36 months for high-risk disease

Type of adjuvant intravesical therapy	**Details of therapy adjuvant intravesical therapy**
Induction dose	6 doses intravesical BCG, once every week
Maintenance	3 doses intravesical BCG, once every week at 3, 6, 12, 18, 24, 30, and 36 months from induction

Hold treatment if traumatic catheterization, or persistent gross hematuria, or documented urinary tract infection, or severe local symptoms or fever suggesting BCG sepsis and treat patients accordingly. BCG: Bacillus

Calmette-Guerin