Saudi oncology society and Saudi urology association combined clinical management guidelines for renal cell carcinoma

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Abstract

In this report, updated guidelines for the evaluation, medical and surgical management of renal cell carcinoma are presented. They are categorized according the stage of the disease using the tumor node metastasis staging system 7th edition. The recommendations are presented with supporting evidence level.

Key Words: Guidelines, renal cell carcinoma, Saudi Arabia

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MANUSCRIPT

Renal cancer represents the third common genitourinary cancer in Saudi Arabia after urinary bladder and prostate.[1] It accounts for 3.6% of all male cancers and 2.2% of all female cancers. In 2010, a total of 167 cases where diagnosed in males and 117 cases in females. The Age standardized rate in males was 2.9/100,000 and in females was 2/100,000 populations.

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All cases of renal cell carcinoma (RCC) should preferably seen or discussed in a multidisciplinary forum

1. Pretreatment evaluation:
   - 1.1. Evaluation of suspicious renal cancer:
     - 1.1.1. History and physical examination.
     - 1.1.2. Blood count, renal and hepatic profile.
     - 1.1.3. Computed tomography scan of chest, abdomen and pelvis.
     - 1.1.4. Urine analysis.
     - 1.1.5. Urine cytology should be done if urothelial cancer is suspected.
     - 1.1.6. Kidney biopsy is not routinely indicated in localized tumors, however tissue diagnosis should be obtained prior to systemic therapy.
     - 1.1.7. Computed tomography brain and bone scan should be done only if clinically indicated.

2. Staging:[2]
   The American Joint Commission on cancer staging tumor node metastasis 7th edition will be adopted.
3. Risk stratification for metastatic RCC:
   The Memorial Sloan Kettering Cancer Center (MSKCC) risk classification for metastatic disease will be used:[3] Risk factors are:
   - 3.1. A Karnofsky performance status of <80%.
   - 3.2. Serum lactic dehydrogenase level >1.5 times the upper limit of normal.
   - 3.3. Corrected serum calcium >10 mg/dL (2.5 mmol/L).
   - 3.4. Hemoglobin concentration below the lower limit of normal.
   - 3.5. No prior nephrectomy (i.e. no disease-free interval).

   Each of the above gives a score of one. Patients will be classified according to the total score as follow:
   0 points low risk.
   1, 2 points intermediate risk.
   3, 4, 5 points high risk.
4. Treatment:
   - 4.1. Localized disease (clinical Stage Ia):
     - 4.1.1. The recommended treatment is surgical excision preferably by partial nephrectomy (open, laparoscopic, or robotic) in all cases and especially in patients with solitary kidney, bilateral tumors, familial renal cell cancer, or renal insufficiency (EL-1).[4-10]
     - 4.1.2. Radical nephrectomy should be preserved for cases where partial nephrectomy is not technically feasible after consultation with an experienced surgeon (EL-1).[4-10,11-17]
     - 4.1.3. Nonsurgical options (i.e. active surveillance, cryoablation, and radiofrequency ablation) are all inferior to surgical excision in terms of oncological outcome and are not recommended except in patients with significant comorbidities that interdict surgical intervention (EL-2).[18-22]
   - 4.2. Localized disease (clinical Stage Ib)
     - 4.2.1. The recommended treatment is radical nephrectomy (EL-1).[11-17,23-28]
     - 4.2.2. Partial nephrectomy may be an option especially in patient with solitary kidney, bilateral tumors, familial renal cell cancer, or renal insufficiency. However, this should only be performed by experienced surgeon in a high-volume center (EL-1).[23-30]
     - 4.2.3. Nonsurgical options (i.e. active surveillance, cryoablation, and radiofrequency ablation) are not recommended.
   - 4.3. Localized disease (clinical Stage IIa, b)
     - 4.3.1. The recommended treatment is radical nephrectomy (EL-1).[11-17,23-28]
     - 4.3.2. Partial nephrectomy and nonsurgical options (i.e. active surveillance, cryoablation, and radiofrequency ablation) are not recommended.
   - 4.4. Localized disease (clinical Stage IIIa, b, c)
     - 4.4.1. The recommended treatment is radical nephrectomy with complete excision of all venous thrombus in the renal vein, inferior vena cava, and right atrium (EL-2).[15,16]
     - 4.4.2. These surgeries should only be performed in a tertiary care centers with the availability of cardiac, vascular or hepatic surgeon depending on the case (EL-2).[29,30]
   - 4.5. Excision of the ipsilateral adrenal gland
     - 4.5.1. Ipsilateral excision of the adrenal gland during radical nephrectomy is indicated in upper pole tumors or in the presence of a concurrent radiologicaly detectable adrenal gland lesion (s) (EL-2).[31-34]
   - 4.6. Lymphnode dissection
     - 4.6.1. Resection of the regional lymphnodes (within Gerota's fascia) is an integral part of radical nephrectomy
     - 4.6.2. Resection of the nonregional lymphnodes provides no therapeutic advantages and it is used for staging purposes (EL-1).[35]
   - 4.7. When doing partial nephrectomy the surgeon should aim to obtain adequate surgical margin and avoid tumor inoculation.[36-38]
   - 4.8. Metastatic/advanced disease: Several scenarios could be faced in patients with metastatic disease. Accordingly the following should be considered:
     - 4.8.1. Potentially resectable primary with solitary metastasis or multiple resectable lung metastasis: Those patients should undergo primary nephrectomy and resection of the metastatic lesion/s (EL-2).[39] Following complete resection no further therapy or "adjuvant therapy" is indicated (EL-3).
     - 4.8.2. Potentially resectable primary and multiple metastasis: Those patients should undergo resection of the primary tumor if in good performance status (EL-1),[40,41] then should start systemic therapy according to the following guidelines:
       - 4.8.2.1. Clear cell histology, good and intermediate risk: Options of therapy include systemic therapy with either sunitinib[42] (EL-1), Bevacizumab and interferon α-2a[43,44] or pazopanib[45] (EL-1).
       - 4.8.2.2. Clear cell histology with poor risk: Temsirolimus is the preferred treatment.[46] (EL-1)

4.8.2.3. Nonclear cell histology: Options of therapy include temsirolimus (EL-2),[47] sunitinib[48] (EL-2), or sorafenib[48,49] (EL-2). Medullary and collecting duct carcinoma should be treated with platinum based chemotherapy[50,51](EL-3)

4.8.3. Unresectable primary with or without metastatic disease: Those patients with good performance status should be offered systemic therapy according to their histology and MSKCC risk group as in item 4.8.2.

4.8.3.1. Recurrent disease postprimary nephrectomy: Treatment will depend if resectable or not:

4.8.3.1.1. If resectable solitary metastasis: Surgical resection should be attempted[52-54] (EL-2). No systemic therapy is of benefit following complete resection (EL-3)

4.8.3.1.2. If nonresectable recurrence: Patient should be treated as metastatic disease according to their histology and MSKCC risk group as in item 4.8.2.1-3

4.8.4. Second line therapy post-tyrosine kinase inhibitors (TKI) failure: Patients who fail first line TKI's should receive second line therapy if in reasonable performance status, options of second line agents include everolimus (EL-1)[55,56] or axitinib[57] (EL-1).

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