63

Improving the definition of high-risk patients for tumor recurrence from clear-cell renal cell carcinoma – The U-CISS classification

Eur Urol Suppl 2019; 18(1);e84

Lebacle C. [1], Kroeger N. [2], Pooli A. [3], Liu S.T. [4], Chamie K. [3], Belldegrun A.S. [3], Shuch A.S. [3], Drakaki A. [5], Pantuck A.J. [3]

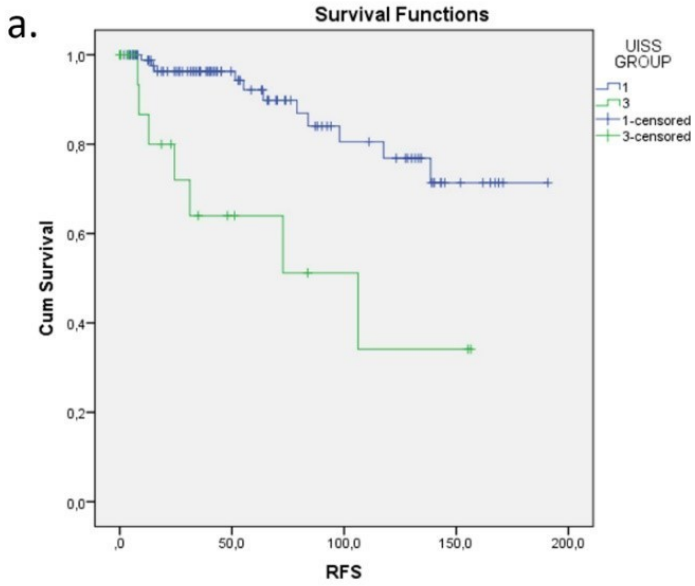
[1]Institute of Urologic Oncology (IUO), David Geffen School of Medicine at UCLA, Los Angeles, CA - Department of Urology, University Hospital Bicetre, APHP, University Paris-Saclay, Dept. of Urology, Le Kremlin Bicetre, France, [2]University Medicine Greifswald, Dept. of Urology, Greifswald, Germany, [3]Institute of Urologic Oncology (IUO), David Geffen School of Medicine at UCLA, Dept. of Urology, Los Angeles, United States of America, [4]David Geffen School of Medicine at UCLA, Dept. of Hematology and Oncology, Los Angeles, United States of America, [5]Institute of Urologic Oncology (IUO), David Geffen School of Medicine at UCLA, Dept. of Hematology and Oncology, Los Angeles, United States of America

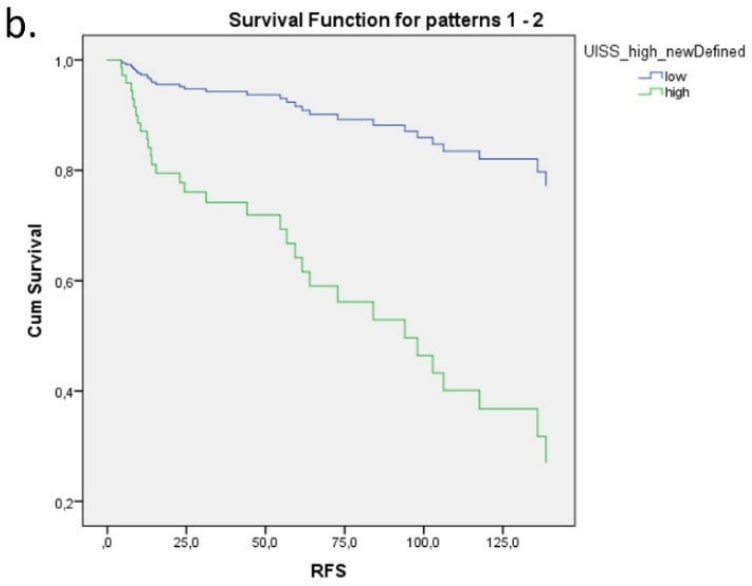
Introduction & Objectives: Thirty percent of patients with localized clear-cell renal cell carcinoma (ccRCC) will ultimately develop recurrence (local or metastatic) after nephrectomy. Current clinical/pathological risk stratification systems still miss-classify patients. A better stratification is needed to select high-risk patients who may benefit from adjuvant therapy. We sought to improve the existing UISS by the including genetic information in a new UCLA cytogenetic integrated staging system (U-CISS).

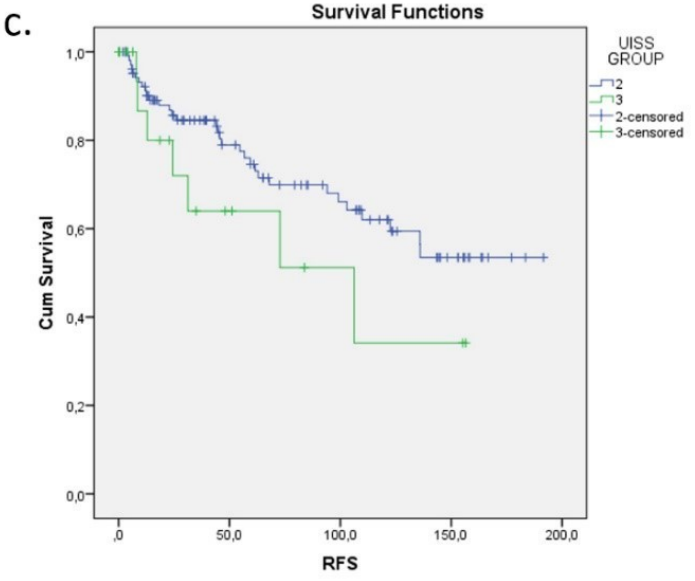
Materials & Methods: A total of 240 patients from UCLA with localized ccRCC and cytogenetic analysis on tumor specimen were included in the study. In a continuation of our previous research, cytogenetic (combined loss 3p-14q) and a pathological high-risk feature, microvascular invasion (MVI) were implemented in the UISS. Association with recurrence free survival (RFS) was analyzed in a uni- and multivariable fashion; prognostic accuracy was tested with the c-index. All tumors that had either MVI, combined loss 3p/14q or both in the UISS low-risk group were placed into the new U-CISS intermediate group. Tumors with one or both risk factors in the UISS intermediate group were placed into the new U-CISS high-risk group.

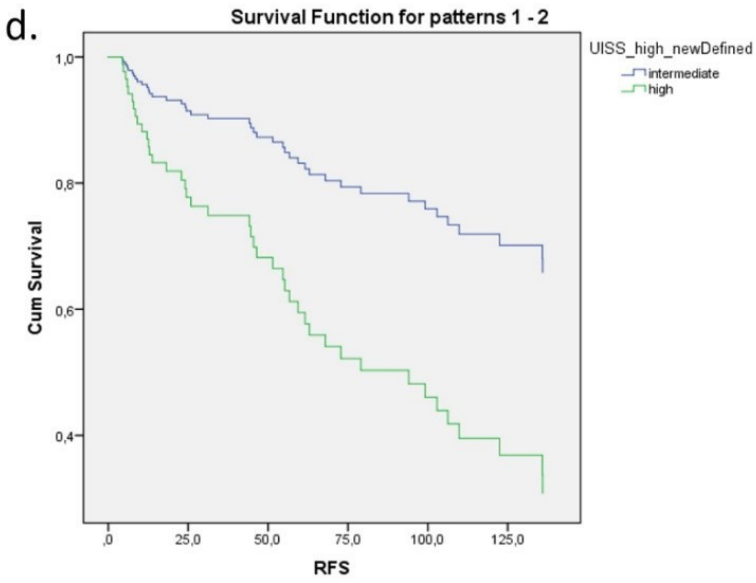
Results: Fifty patients (21%) developed tumor recurrence. On multivariate analysis, combined loss 3p-14q, and MVI were independent prognostic factors. The U-CISS placed significantly better prognosticated RFS in the high-risk group (7/50 (14%) with UISS vs. 23/50 (46%) with U-CISS) and thus, was more accurate in prognosticating RFS (Figure 1). The c-index for recurrence prognostication was improved in the U-CISS (0.70 vs. 0.65 for the UISS). Furthermore, the U-CISS was a better prognostication tool when the intermediate and high-risk group were combined (prognostication of 74% with U-CISS vs. 68% UISS).

Figure 1 Kaplan Meier analysis comparing UISS and the U-CISS classification.
a. UISS groups low (1) and high (3); b. U-CISS low and high; c. UISS groups intermediate (2) and high (3); d. U-CISS intermediate and high









Conclusions: The use of U-CISS, which integrates genomic alterations with clinical and pathologic features, allowed a re-allocation of patients to create a better stratification of recurrence risk. This new definition of high-risk of recurrence could significantly improve selection of patients who are in greatest need of closer surveillance and/or adjuvant treatment.