**ABSTRACT**

Renal cell carcinoma (RCC) is a distinctly uncommon entity in children and young adults, with the vast majority of cases occurring between the fifth and seventh decades. Histologic subclassification of RCC has been demonstrated to have prognostic significance, and different subtypes have disparate responses to various types of clinical therapy. This is particularly important due to the potentially different clinicopathologic disease course in younger patients.

**BACKGROUND**

Renal cell carcinoma (RCC) is distinctly uncommon in children and young adults, with the vast majority of cases occurring between the fifth and seventh decades. Histologic subclassification of RCC has been demonstrated to have prognostic significance, and different subtypes have disparate responses to various types of clinical therapy. This is particularly important due to the potentially different clinicopathologic disease course in younger patients. Immunohistochemistry is being used with increasing frequency to make these important distinctions. This is amplified in situations in which the clinical responses to various types of clinical therapy.

**RESULTS**

There is a significant overlap between the immunoprofile of RCC subtypes in patients aged 45 years and younger and that in RCC subtypes of older patients. AKI is expressed by a significant proportion of PRCC and variable proportions of the other subtypes, with a distinctive nuclear staining pattern. Survivin is an immunohistochemical profile found in RCCs in older patients. There is a significant overlap between the immunoprofile of RCC subtypes in patients aged 45 years and younger and that in RCC subtypes of older patients. AKI is expressed by a significant proportion of PRCC and variable proportions of the other subtypes, with a distinctive nuclear staining pattern. Survivin is expressed in a significant proportion of all RCC subtypes while VHL is highly expressed in CRCC and variably expressed in all other subtypes. The significance of this finding is uncertain, as further work needs to be done to determine the prognostic significance of these markers on the various subtypes of RCC.

**CONCLUSIONS**

We retrospectively analyzed 87 cases of RCC in patients aged 45 years or younger from our institutional file database. For these cases, a tissue microarray block and histologic slides were produced in order to evaluate for the immunohistochemical staining by the following (1) diagnostic antibodies: cytokeratin (CK) AE1/AE3, CK7, CK903, TFE3, TFEB, CD10, AMACR, C-KIT, vimentin, EMA, CAIX, and with the following prognostic antibodies: PAX-8, survivin and VHL. The slides were reviewed and a stain was deemed to be positive if it demonstrated moderate to strong intensity in more than 5% of the tumor cells. The immunohistochemical profile of the different tumor subtypes is highlighted in Table 1. The overall profiles of the different tumor types are listed in Table 2. The immunohistochemical profile of the different tumor subtypes is highlighted in Table 1. The overall profiles of the different tumor types are listed in Table 2.

**REFERENCES**

