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The spectrum of adult renal cell carcinoma, including possible molecular types, presenting to a tertiary care hospital in Sri Lanka

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Introduction and objective: Renal cell carcinoma-(RCC) is the commonest renal malignancy, for which histomorphology remains important in determining the type. The aim of this study was to describe the RCC types encountered at a tertiary care delivery setting based on routine histomorphology and to identify potential cases requiring molecular analysis for further typing, as per the 5th WHO urinary and male genital tumours classification (Uro5).

Methodology: Microscopy of all RCC cases reported at the Histopathology Departments of the National Hospital and Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka from 2016 to 2020 were reviewed. Based on the most representative routine haematoxylin and eosin histomorphology, these were typed according to the WHO-Uro5. The tumours which need further molecular testing for typing were separated out.

Results: A total of 228 RCC cases were reviewed. This included 189 clear cell RCC (82.9%), 24 papillary RCC (10.5%) and six chromophobe carcinomas (2.6%). One eosinophilic solid and cystic RCC (0.3%) and one multilocular cystic renal neoplasm of low-malignant potential (0.3%) were identified. Seven cases which possibly required molecular testing for tumour typing in addition to histomorphology were separated out (3.1%).

Discussion and conclusion: With the introduction of targeted therapy, molecular profiling has significantly impacted the classification of adult renal malignancies, albeit histomorphology being the foundation of tumour taxonomy. The latest WHO-Uro5 has introduced a group of molecularly defined RCC entities. Therefore, it is worth facilitating molecular analysis to determine the RCC type as evidenced by this study (3.1%). The actual numbers of molecularly defined RCC types could even be higher, as some may mimic histomorphologically defined RCC types.

Keywords: renal cell carcinoma, histomorphology, classification, molecular testing

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