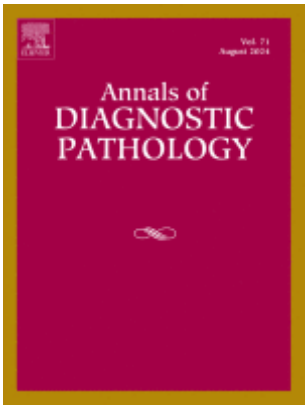
Annals of Diagnostic Pathology

Volume 71, August 2024, 152297



Alpha-methyl CoA racemase (AMACR) reactivity across the spectrum of clear cell renal cell neoplasms

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PMID: 38579443

DOI: 10.1016/j.anndiagpath.2024.152297

First published: March 2024

Abstract

a-Methylacyl coenzyme A racemase (AMACR) is traditionally considered to be a marker of papillary renal cell carcinoma. However, AMACR expression can be seen in other renal tumors. The aim of this study was to investigate AMACR immunoreactivity within the spectrum of clear cell renal cell neoplasms. Fifty-three clear cell renal epithelial tumors were used in assembling the following four cohorts: low grade (LG) clear cell renal cell carcinoma (CCRCC), high grade (HG) CCRCC, CCRCC with cystic changes, and multilocular cystic renal neoplasm of low malignant potential (MCRNLMP). Representative blocks were stained for AMACR, using two different clones (SP52 and OV-TL12/30). There were at least some AMACR immunoreactivity in 77.8 % and 68.9 % of CCRCCs (using SP52 and OV-TL12/30 clone, respectively). Moderate to strong positivity, or positivity in more than one third of the tumor (even weak in intensity) was detected in 46.7 % of CCRCCs using SP52 and in 48.9 % of CCRCC using OV-TL12/30 clone. The highest AMACR reactivity was observed in HG CCRCC (60 % by SP52 and 66.7 % by OV-TL12/30). Strong and diffuse AMACR positivity was detected in 8.9 % of all CCRCCs. AMACR immunoreactivity in MCRNLMP was 37.5 % (SP52 clone) and 25 % (OV-TL12/30 clone). We demonstrated relatively high expression rate of AMACR in CCRCC, while very variable in intensity and distribution. This finding may have diagnostic implications especially in limited samples (i.e., core biopsies), as AMACR positivity does not exclude the diagnosis of CCRCC.

Keywords: AMACR; Clear Cell Renal Cell Carcinoma; Immunohistochemistry; Kidney; Multilocular Cystic Renal Neoplasm of Low Malignant Potential; Racemase.