

The impact of sarcomatoid features on survival outcomes in metastatic renal cell carcinoma patients receiving upfront cytoreductive nephrectomy: A retrospective analysis of a contemporary series

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Introduction & Objectives: Sarcomatoid features (SF) correlate with worst survival outcomes in patients with primary metastatic renal cell carcinoma (mRCC). Some reports suggested a cut-off above 25% sarcomatoid features as a predictor of poorer outcome. We aimed to report survival outcomes on a large dataset of patients with SF treated with cytoreductive nephrectomy (CN).

Materials & Methods: A purpose built multi-institutional international database (REgistry of MetAstatic RCC- REMARCC project) was used for this retrospective analysis. Patients with diagnosis of mRCC treated with CN with or without metastasectomy were included. The cohort was stratified according to the presence of SF in the primary specimen. Kaplan Meier methods and Cox proportional Hazards Regression Analyses were used to estimate overall mortality rates. The reverse Kaplan Meier method was used to estimate the median (IQR) follow-up.

Results: Overall 617 patients who underwent CN were included. Of all, 78 (12.6%) patients received synchronous/metachronous metastasectomy. A total of 118 (19.1%) patients had SF in the final specimen. The median involvement of the sarcomatoid component was 35.0% (IQR 10.0-72.5%). Patients with SF were more frequently classified as poor prognosis according to Heng's criteria (44.9 vs 33.3%, p=0.022). Moreover, patients with sarcomatoid features harbored more frequently locally advanced disease [pT3-4 stage tumors (88.1 vs 73.7%, p=0.003) and pN1 tumors (28.8 vs 18.22%, p=0.025)]. The median follow-up was 55.1 (IQR 25.9-120.6) months. Overall, 395 (64.0%) deaths were recorded in the whole cohort. The median overall survival was shorter for patients with SF (13.1 vs 27.9 months, p<0.001). However, neither patients with a SF >35% (Figure 1) nor those with a SF >50% showed higher overall mortality rates than those with <35% and <50% SF, respectively (p=0.720 and 0.960, respectively).

Patients with SF showed higher overall mortality rates even after accounting for Heng's risk group, type of surgery and pT and pN stage (HR: 1.35, 95%CI: 1.04-1.75, p=0.024).

Conclusions: Patients with mRCC and SF experience higher mortality rates, even when accounting for pathologic status and risk group. Interestingly, the extent of sarcomatoid defined as >50% in the specimen was not predictive of higher mortality rates within patients with SF. These results suggest that all patients with a SF on primary tumor should be carefully followed independently of percentage of sarcomatoid dedifferentiation.