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Survival of colorectal small cell carcinoma and comparison with colorectal adenocarcinoma

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BACKGROUND

Colorectal small cell carcinoma (SCC), comprising fewer than 1% of colorectal cancers, is associated with a poor prognosis. However, detailed survival information is limited due to its rarity. In this study, we performed a survival analysis using Survival, Epidemiology, and End Result (SEER) database (2000-2022) and compared outcomes with colorectal adenocarcinoma.

METHODS

All patients with SCC or adenocarcinoma with colon or rectal primaries were extracted from SEER database. AJCC stage was calculated based on 8th edition TNM classifications. Stage-by-stage median overall survival (mOS) was calculated by Kaplan-Meier method. The mOS were compared between SCC and adenocarcinoma and between colon SCC and rectal SCC using log-rank test. Univariate and multivariate Cox regression, including AJCC stage, surgery, radiation, and chemotherapy variables, was used to model survival trends.

RESULTS

761 colorectal SCC cases were extracted. Median age was 65 (24-89) and median follow-up was 108 months (95% CI: 65 – 129). While no significant mOS difference was observed between colon and rectal SCC for stages I–III, a significantly longer mOS was observed in stage IV rectal SCC when compared with stage IV colon SCC (7 months vs 2 months, p<0.0001; Table 1). When compared with cohorts of patients with colon and rectal adenocarcinoma, more SCC cases were diagnosed at stage IV. Patients with SCC of both colon and rectum had significantly shorter mOS than adenocarcinoma across different stages except for stage II colon, for which only numerically shorter mOS was observed with SCC (Table 1). In Cox regressions, surgery and chemotherapy were significantly associated with improved survival for both primaries (p<0.001), while radiation was not significant for either primary.

Table 1. Survival analysis.

mOS (months)	Colon SCC (n/mOS)	Colon Adenocarcinoma (n/mOS)	Colon: SCC vs Adenocarcinoma P-value	Rectal SCC (n/mOS)	Rectal Adenocarcinoma (n/mOS)	Rectal: SCC vs Adenocarcinoma P-value	Colon SCC vs Rectal SCC P-value
Stage I	19/32	114,213/144	<0.0001	27/23	54,702/160	<0.0001	0.99
Stage II	17/38	121,757/106	0.4	17/16	38,417/106	<0.0001	0.065
Stage III	40/14	104,793/82	<0.0001	50/19	46,687/107	<0.0001	0.48
Stage IV	245/2	83,542/13	<0.0001	260/7	36,652/17	<0.0001	<0.0001

CONCLUSIONS

Colorectal SCC is an aggressive subtype of colorectal malignancy with poor prognosis. Most patients present with stage IV disease. When compared with stage IV colon SCC, stage IV rectal SCC has significantly longer mOS, whereas there were no significant mOS differences between early-stage colon and rectum SCC. Further research should continue exploring early diagnosis and effective therapies for this rare, aggressive malignancy.

ABSTRACT ID 33434