Introduction: Colorectal cancer (CRC) is a heterogeneous disease and sidedness (right colon (RC) vs. left colon (LC)) reflects different clinical, biological and molecular behaviors, which could have a significant prognostic impact. This study tried to evaluate the impact of sidedness on overall survival (OS) and progression-free survival (PFS) in CRC patients treated with anti-EGFR antibodies in first line palliative chemotherapy.

Methods: Retrospective cohort of adult patients with CRC treated with anti-EGFR antibodies in first line palliative chemotherapy between 01/01/2012 and 31/12/2016 in a tertiary university hospital. Differences between groups were determined according to chi-square test; OS and PFS were estimated by Kaplan-Meier method and multivariate analysis according to Cox regression; a significant level of 0.05 was chosen to assess the statistical significance.

Results: We included 65 patients. Fifteen patients had RC tumors (cecum: 5; ascendant: 1; hepatic flexure: 1; proximal transverse: 6) and 50 had LC tumors (splenic flexure: 3; sigmoid: 33; rectum: 11). The median age at diagnosis of metastatic disease was 63 years-old [28-79]. Thirty eight patients (58.5%) were treated with cetuximab and 27 (41.5%) with panitumumab. Concomitant chemotherapy protocol was FOLFIRI in 41 patients (63.1%), FOLFOX in 19 (29.2%) and irinotecan in 5 (7.7%). There were no statistically significant differences between RC and LC groups. The median OS was 33.8 months (CI 95% 19.4-48.3 months). In univariate analysis, patients with RC cancer had an unfavorable OS (RC 26.8 vs. LC 43.4 months, p = 0.001). An ECOG performance status ≥ 1 at metastatic diagnosis, presence of bone metastases, hypomagnesemia during anti-EGFR treatment and irinotecan monotherapy had prognostic impact on OS. In multivariate analysis, ECOG ≥ 1 (HR 0.323, CI 95% 0.149-0.698, p = 0.004), RC (HR 0.322, CI 95% 0.129-0.804, p = 0.015), irinotecan monotherapy (HR 0.319, CI 95% 0.097-0.869 p = 0.027) and bone metastases (HR 0.220, CI 95% 0.058-0.838, p = 0.027) kept their negative prognostic impact in OS. The median PFS was 13.0 months. Patents with RC (RC 7.5 vs. LC 16.3 months, p < 0.001) and those who were treated with irinotecan monotherapy (irinotecan 8.2 vs. FOLFOX/FOLFIRI 13.9 months, p = 0.003) also had worse PFS, both in univariate and multivariate analysis.

Conclusion: In our cohort of CRC patients, right-sided tumors demonstrated worse OS and PFS, thus reflecting the significant prognostic impact of sidedness. Growing evidence on sidedness should alert oncologists to RC cancer patients as a group with a more aggressive disease and for which the optimal treatment strategy is still controversial. Performance status, the presence of bone metastases and treatment with irinotecan monotherapy vs. FOLFOX/FOLFIRI also emerged as prognostic factors.