

## The effect of primary tumor location on second- or later-line treatment with anti-EGFR antibodies in patients with metastatic colorectal cancer: A single-center cohort study

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**Background:** The guideline recommends the use of anti-epidermal growth factor receptor monoclonal antibodies (anti-EGFR Ab) as the first-line treatment only for patients with left-sided RAS wild type (RASwt) metastatic colorectal cancer (mCRC). However, there are no recommendations on tumor sidedness in subsequent lines. This study aims to evaluate the effect of primary tumor location on second- or later-line treatment outcomes in patients with KRASwt mCRC.

**Methods:** Medical records of patients diagnosed with mCRC at Siriraj Hospital between 2008 and 2019 were retrospectively reviewed. Patients with KRASwt who received anti-EGFR Ab in the second- or later-line treatment were included. The impact of tumor-sidedness on the progression-free survival (PFS) was determined using the Kaplan–Meier method and compared using the log-rank test.

**Results:** Of 671 patients who had data on KRAS analysis, 396 (59%) had KRASwt. Of these, 210 patients received anti-EGFR Ab in the second- or later-line treatment. Twenty-nine percent of patients (60 out of 210) had extended RAS analysis. Thirty patients (14%) had right-sided tumors, while 180 (86%) had left-sided tumors. Sixty-nine percent of patients (146 of 210) were treated with anti-EGFR Ab in the third line, while 19% and 12% were treated in the second and fourth lines, respectively. Single-agent irinotecan was the most commonly used chemotherapy backbone (92%). Patients with right-sided tumors had non-significantly inferior PFS compared with patients with left-sided tumors (median PFS was 4.7 months, 95% CI 0.8–8.7 vs. 6 months, 95% CI 4.6–7.3;  $p = 0.55$ ). Subgroup analysis on the impact of primary tumor location showed no difference in PFS when stratified by treatment lines.

**Conclusions:** This study demonstrated that tumor sidedness has no impact on treatment outcomes in patients treated with anti-EGFR Ab in second- or later-line treatment. Therefore, there is not enough evidence to use tumor sidedness for treatment selection in these settings. A multicenter retrospective cohort study is ongoing.

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