Background: In recent years, various studies have convincingly shown that mCRC patients with left-sided primaries have a significantly better prognosis than those with right-sided tumors. More research is required to identify the biomarkers that cause this difference in survival. Furthermore, these conclusions are mostly based on data of clinical trials and therefore selected patients. Confirmation in population-based studies is necessary. Therefore, the aim of current study is to compare the impact of biomarkers on survival rates in left- and right-sided mCRC in the (non-selected) Belgian population.

Methods: In Belgium, data on patient and tumor characteristics of all new diagnosed cancers are collected in the Belgian Cancer Registry. A random sample of 1035 patients diagnosed with mCRC in 2014 was included in our analysis. We obtained information on age, sex, primary tumor location, biomarker data (MMR status and BRAF, KRAS and NRAS mutational status) and survival. We constructed a logistic regression model, using location, age, gender and biomarkers as independent variables and survival as dependent variable.

Results: After exclusion of 177 patients with a second tumor, the study included 858 mCRC patients: 268 (31.24%) with right-sided mCRC, 352 (41.03%) with left-sided mCRC, 212 (24.71%) with rectal cancer and 26 (2.03%) with an overlapping lesion or unknown localization. KRAS and BRAF mutations were more frequently observed in right-sided tumors compared to left-sided tumors, whereas NRAS mutations were more frequently observed in left-sided CRC compared to right-sided CRC. Microsatellite instability (MSI)-high tumors were more frequently observed on the right side of the colon. Detailed overall survival data according to tumor location and biomarker status will be available at the congress.

Conclusions: We present the survival data of 1035 Belgian mCRC patients according to age, sex, tumor location and biomarker status. Currently, we can conclude that in Belgian patients left-sided mCRC has a better prognosis than right-sided mCRC, regardless of biomarkers status.

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