Comparing metastatic (M) young onset (YO) colorectal cancer (CRC) with average onset (AO): Do they differ clinically and genetically?

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Background: The incidence of colorectal cancer in patients (pts) under the age of 50 has been steadily on rising over the last two decades. This is in sharp contrast to average onset CRC, where there has been a decline. Little is known about clinical behavior and biology of metastatic CRC in the growing YO population.

Methods: We defined YO as < 45 yo and AO as > 50 yo. To better understand the differences in biology of early onset rectal tumors, we tabulated the clinical characteristics, genomics using next generation sequencing (MSK-IMPACT), treatments and outcomes in 175 metastatic pts with EO CRC, treated at Memorial Sloan Kettering Cancer Center between 2014 and 2017 and compared these cases to a cohort of AO M CRC cases (n = 413) with CRC related hereditary syndromes such as Lynch Syndrome and inflammatory bowel disease were excluded.

Results: We analyzed 175 in the YO cohort. Age at diagnosis was between 17-35 yo in 46 and between 36-45 in 129 pts. Among YO patients, there were 50.2% males, 27.7% smokers and the median BMI was 25.5. Comparing to AO, YO pts have significantly less right sided tumors (22.8% vs 33%; p = 0.01). Treatment choices did not differ among YO vs AO groups; systemic chemotherapy (46.7% vs 42.6%; p = 0.40) and metastasectomy (54.6 vs 49.4; p = 0.33). Overall survival was 59 months in the YO vs 63.9 for the AO (p = 0.194). Among genetic characteristics mutational burden and copy number comparison showed no significant differences between the groups.

Conclusions: Our series describes a comprehensive clinical and genomic profile of EO mCRC. In contrast to prior reports YO does not appear to be associated with more aggressive disease and there was no difference in treatment modalities. Detailed genomic and clinical characteristics will be presented.

Legal entity responsible for the study: Andrea Cercek.

Funding: Has not received any funding.

Disclosure: All authors have declared no conflicts of interest.