Aim: Previous reports have described differences in biology and outcome based on whether the primary bowel cancer is right (R) or left (L) sided. Some authors have, however, argued that separating into right and left is too limited and that different patterns still exist within each subgroup. Here we aimed to look at each individual primary site and outcomes from the SA mCRC registry to test this hypothesis.

Methods: We assessed for differences in patient characteristics and outcomes based on the standard divisions of primary sites; caecum, ascending (AC), hepatic flexure (HF), transverse (TC), splenic flexure (SF), descending (DC), sigmoid (SC), rectosigmoid (RS) or rectal. Kaplan Meier was used for survival outcomes and a descriptive analysis was undertaken for prognostic markers.

Results: 2877 patients were analysed. Primary site frequency was as follows; Caecum 14.6%, AC 9.2%, HF 3.1%, TC 6.2%, SF 2.8%, DC 3.9%, SC 21.9%, RS 6.8% and 26.7% rectum (4% unknown). Differences between sites were age, female sex, rates of poorly differentiated pathology, and rate of lung metastasis. There were no subgroups within the R & L division that stood out as behaving differently. Median age was 76.3 yrs for caecum compared with 69.3 yrs for rectum. Female sex was highest in caecum 52.5% vs. 34.9% rectum. Poorly diff pathology, caecum to SF 30-40.7% vs. DC to rectum 18.3-20.9%. Lung metastasis, caecum to SF 3-6% vs. DC to rectum 9.6-12.8%. There was variation in KRAS mutation; highest 59% in caecum, 48% for DC and <40% (range 35-39%) for remaining primary sites. Median overall survival (mOS) also followed a consistent pattern with lower survivals for R primary, increasing across to L. mOS measured in months for all patients & active therapy (chemotherapy +/-hepatic surgery) patients is as follows; caecum 9.9/18.1, AC 9.8/18, SF 9.8/15, HF 9.2/17.2, TC14.1/22, SF 15.6/22, SC 20.3/30, RS 20.4/29, rectum 20/28.

Conclusions: Cancer of the caecum had the highest proportion of females, poorly differentiated pathology and KRAS exon 2 mutation. Lung metastases were observed more commonly in cancers that originate from the distal colon to rectum as compared to more proximal cancers. R sided primary sites have a poorer outcome consistently than those designated L. Overall, the SA mCRC data supports a distinction between metastatic tumors of right versus left sides origin, with the transition point being at the splenic flexure.

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