Downstaging of right-sided colorectal cancer diagnosed through iron deficiency anaemia

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Introduction Previous studies have suggested that iron deficiency anaemia (IDA) is an indicator of poor prognosis in colorectal cancer (CRC), but this may be due to confounding – IDA is much commoner in right-sided CRC, which tends to late presentation and therefore a worse prognosis. This study aims to determine the effect of diagnosing CRC through the detection of IDA on tumour stage - a surrogate marker of prognosis in CRC - whilst controlling for tumour side.

Methods A total of 1154 cases of CRC with adequate clinical information were identified from the MDT records of a single general hospital for 2010–2016. Histological confirmation of adenocarcinoma was available in 90%. Each case was staged on the basis of the available radiological and surgical evidence, and the route of presentation identified. Because tumour side and presentation are surrogate markers of prognosis in CRC, these variables were merged to create a new variable to reflect CRC prognosis, and analysed using binary logistic regression models.

Results A summary of the basic patient data is shown in table 1. As anticipated, most cases presenting with IDA proved to have right-sided tumours, whilst the majority of cases diagnosed through screening were left-sided.

Table 1

	IDA	Screening	Symptomatic	Overall
Number	171	213	770	1154
Sex ratio – M/F	1.1	1.5	1.3	1.3
Age (years) – mean (sd)	77 (± 11)	68 (± 6)	73 (± 13)	72 (± 12)
Hb (g/l) – mean (sd)	88 (± 17)	133 (± 19)	122 (± 23)	119 (± 25)
Early stage (I or II) – n (%)	89 (52.0%)	127 (59.6%)	304 (39.5%)	520 (45.1%)
Right-sided – n (%)	141 (82.5%)	71 (33.3%)	243 (31.6%)	455 (39.4%)

As expected, left-sided tumours diagnosed through screening (mostly in the national bowel cancer screening programme) were significantly down-staged in comparison to those presenting with symptomatic disease – with an odds ratio for early stage disease of 2.09 (95% CI 1.4 - 3.1, P<0.001).

The key finding in this study is that right-sided tumours diagnosed following the detection of IDA also appear to be down-staged compared to those presenting with symptomatic disease – with an odds ratio for early stage disease of 2.52 (95% CI 1.6 - 3.8, P<0.0001).

Conclusion The findings suggest a prognostic benefit to diagnosing right-sided CRC through the detection of IDA, with a benefit comparable to that of the screening programme for left-sided CRC. This strengthens the case for a systematic approach to blood count monitoring in the population at-risk of CRC.