mortality between 1996 and 2016 from Cancer Research UK. Trends were analysed by Joinpoint Regression Programme expressed as average annual percentage change. Incidence of young-onset colon and rectal cancer increased significantly in both men (colon cancer: 3.9 per 100 000 to 5.9 per 100 000; rectal cancer: 3.1 per 100 000 to 3.9 per 100 000) and women (colon cancer: 3.6 per 100 000 to 6.2 per 100 000; rectal cancer: 2.3 per 100 000 to 3.1 per 100 000). Mortality of young-onset colon cancer decreased significantly in men (1.7 per 100 000 to 1.1 per 100 000) but had an insignificant decrease in women (1.4 per 100 000 to 1.1 per 100 000). However, the rectal cancer mortality increased significantly in both men (0.8 per 100 000 to 1.2 per 100 000) and women (0.6 per 100 000 to 1.0 per 100 000) (table 1 and figure 1).

Our study supports the findings of Vuik *et al*[1] in terms of rising incidence of young-onset CRC. Interestingly, the significant increase in mortality from rectal cancer in young adults in the UK contradicts the combined data from the European countries where it showed no significant change in mortality for rectal cancer. Our finding of increasing mortality from rectal cancer suggests that the rise in rectal cancer incidence is real. With contrasting decline on mortality from colon cancer, our findings support the theory that the pathophysiology of colon and rectal cancer are not the same. There are several fundamental differences between colon and rectal cancer. Colon cancer has a higher prevalence of K-RAS mutation, while rectal cancer has a higher prevalence of p53 mutation. Also, there are anatomical and vascular drainage variations. Colon cancer is located in the peritoneal cavity causing peritoneal metastases occurring more frequently, while rectal cancer is located in the pelvis. Rectal venous drainage bypassing the liver could explain higher prevalence of lung and bone metastases. Lastly, the microsatellite instability associated with proximal colon cancer and chromosomal instability in the distal colon or rectum may explain the difference in sensitivity to conventional chemotherapy.[2]

We provide the first UK population-based analysis on assessing the trend in young-onset CRC incidence and mortality. Our observation adds into the wealth of the study by Vuik *et al*[1] and worldwide studies confirming a rising incidence of young-onset CRC. The American Cancer Society has updated its recommendation to reduce the age of CRC screening to 45 years old.[3] While cost-effectiveness analysis needs to be carried out prior to any potential changes to the UK national bowel cancer screening guidelines, our study provides additional data to for the CRC screening

Table 1 AAPC in mortality of young-onset (<50) colon and rectal cancer in UK (1996–2016)

AAPC (95% CI)			
Male		Female	
Colon	Rectum	Colon	Rectum
−2.1 (−2.8 to −1.5)	+1.8 (+1.0 to +2.6)	−0.3 (−2.0 to +1.4)	+2.8 (+2.0 to +3.6)

AAPC, average annual percentage change.

Increasing incidence of young-onset colorectal cancers in the UK and rising mortality in rectal cancers

We read the recent *Gut* publication by Vuik *et al*[1] reporting an increase in incidence of young-onset colorectal cancers (CRCs) in Europe over the last 25 years. However, the rise in incidence was not associated with a similar rise in mortality. This study extracted data from the national and regional European cancer registries from 20 European countries, between years 1990 and 2016. The author claimed that there is some variability among some European countries, and mortality data are not available from the UK. Therefore, we conducted a UK-specific population-based study on young colon and rectal cancer incidence and mortality.

We extracted data on young-onset colon and rectal cancer incidence and

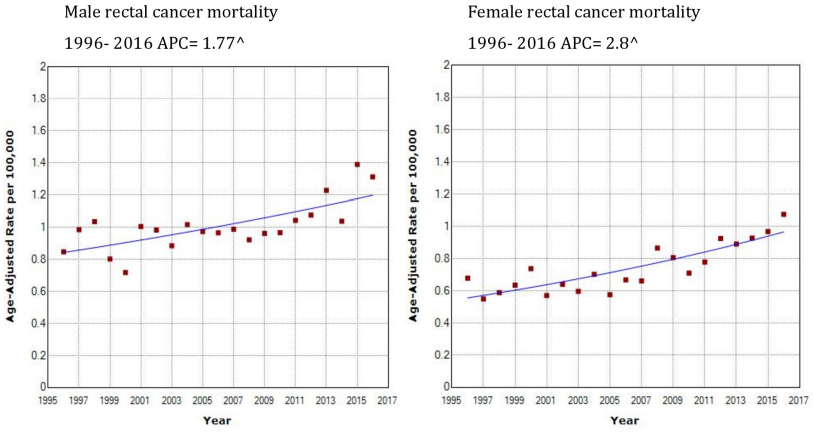

Figure 1 APC of mortality for male and female young-onset (<50) rectal cancer. ^Indicates that the APC is significantly different from zero at the alpha=0.05 level. APC, annual percentage change.

committee. More importantly, our data suggest there is an urgent need for an increased awareness among UK-based clinicians of this alarming epidemiological shift from the stereotypical belief of CRC being a diagnosis in the elderly to one that is increasingly common in the younger age group.

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