

OC-087

COLONOSCOPY WITHDRAWAL TIME AND ADENOMA DETECTION RATE IN SCREENING COLONOSCOPY: THE OPTIMUM AVERAGE WITHDRAWAL TIME IS 10 MIN

doi:10.1136/gut.2011.239301.87

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Introduction Increasing colonoscopy withdrawal time has previously been shown to be associated with increasing adenoma detection rate (ADR). Current guidelines recommend a minimum withdrawal time of 6 min. The optimum mean withdrawal time for adenoma detection is not known.

Methods The mean withdrawal time in negative complete colonoscopies (nc-CWT) was estimated for 147 colonoscopists

in the NHS Bowel Cancer Screening Programme; colonoscopists were grouped in four levels of nc-CWT (<7, 7–8.9, 9–10.9 and ≥11 min). Logistic regression was used to analyse the relationship between CWT and ADR.

Results The study examined data from 31,088 procedures by 147 colonoscopists undertaken between August 2006 and August 2009. The mean ADR in each group was 42.5% in colonoscopists with a mean nc-CWT <7 min, 45.5% in the 7–8.9-min group ($p = 0.002$ for difference compared to lowest nc-CWT group), 47.3% in the 9–10.9-min group ($p < 0.001$) and 47.1% in the ≥11-min group ($p < 0.001$). In multivariable analysis, the ADR of colonoscopists with an nc-CWT of around 10 min was 11% higher than those with an nc-CWT of around 6 min ($p < 0.001$). Both the proportion of adenomas less than 1 cm in size and the proportion of adenomas detected in the proximal colon increased for longer withdrawal times. Advanced adenoma detection was not affected by increasing withdrawal times.

Conclusion Increasing average nc-CWT is shown to be associated with increasing ADR up to 10 min. Beyond 10 min no significant further increase in adenoma yield is seen. This is evidence of the 'ceiling effect' of withdrawal time on adenoma detection. Inadequate bowel preparation quality increases mean withdrawal time in complete colonoscopies but this is not associated with any change in ADR.

The increase in adenoma detection as a result of longer withdrawal is due to detection of more small and right sided lesions, no increase in detection of large or advanced adenomas is seen. We recommend, on the basis of the findings of this study, that the optimal average nc-CWT per colonoscopist for screening colonoscopy is around 10 min.

Competing interests None.

Keywords adenoma, colonoscopy, colorectal cancer, endoscopy.