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LETTER

New-generation chromoendoscopy may increase confidence in the DISCARD2 study

We read with interest the article by Rees *et al*, which assessed narrow band imaging (NBI) optical diagnosis of small colorectal polyps in routine clinical practice (the DISCARD2 study).[1] Several modalities can potentially be used for screening colonoscopy. The quality of white light endoscopy (WL) has greatly improved after the advent of high-definition endoscopy. Chromoendoscopy (CE) with indigo carmine is one of the traditional dye spraying methods for clearer visualisation of subtle lesions. Image-enhanced endoscopy is also becoming popular, and the new NBI system has improved brightness and contrast relative to those of the first-generation systems.

The study by Rees *et al* did not show the usefulness of NBI in a multicentre routine (non-specialist) clinical practice for differentiating adenoma from non-adenomatous lesions and concluded that routine use of NBI was not recommended outside of specialist centres. This is an important message because many randomised control trials are conducted in academic centres by experienced staff.

We have been routinely performing trimodal observation (ie, WL, NBI and CE) from the caecum to the hepatic flexure to minimise missed polyp rates by using Olympus Elite processors and 290 series endoscopes in daily clinical practice. Initially, we performed WL followed by NBI and CE. We additionally performed an alternative observation method by performing NBI followed by WL and CE. We retrospectively analysed these two non-randomised methods (table 1). The adenoma detection rate of the caecum to the ascending colon was significantly higher in the WL first group than in the NBI first group (10% vs 6.1%, respectively; p=0.048), whereas the second and third cumulative detection rates were comparable between the two groups (second detection rates: 12% vs 11%, p=0.50; third detection rates: 18% vs 19%, p=0.85). Additionally, we detected many adenomas in the last observation by CE, with miss rates of 43% and 44%.

The second-generation NBI provided brighter images than those of the previous system and yielded a higher adenoma detection rate than that of the WL examination.[2] However, our investigation showed a higher adenoma detection rate for WL than for NBI. Several points should be considered when interpreting the results. First, because the proximal colon has a wide lumen and large haustra, the NBI brightness might not be sufficient for observation, whereas the brightness is sufficient for the inspection of the oesophagus where the lumen is narrow and straight.[3] Second, we think that the NBI visibility depends on the bowel preparation status compared with WL, which is important in some populations because, for example, many Japanese have diverticula in the proximal colon caused by poor preparation.[4 5] Third, small polyps with flat or depressed morphology are more common in the proximal colon than in the distal colon. These are possibly more easily obscured by residual faeces and are more likely to be missed during NBI observation.[4]

The tandem crossover trimodal methods provided similar second cumulative rates, which indicate that they compensate for each other's shortcomings. The adenoma detection rate in the last CE examination was high. A study in which the adenoma detection rate was found to be higher in CE than in WL using the previous-generation system suggests that the same tendencies apply to the new-generation system.[6] In each of the three modalities, the type of modality that best detects a particular type of lesion should be estimated.

It would be interesting to see if optical diagnosis using multiple modalities, including not only NBI but also CE, improve the confidence in the DISCARD2 study.

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Table 1 Comparison of adenoma detection rates and miss rates of caecum to ascending colon between white light first and NBI first group

	White light first n=385	NBI first n=358	p Value*
ADR, % (no.)			
1st	10 (39)	6.1 (22)	0.048
1st+2nd	12 (47)	11 (38)	0.50
1st+2nd+3rd	18 (70)	19 (67)	0.85
Adenomas, no.	93	97	
First inspection	44	25	
Second inspection	9	29	
Third inspection	40	43	
Miss rate 2nd/1st+2nd	0.17	0.54	0.000072
Miss rate 3rd/1st+2nd+3rd	0.43	0.44	0.85
All polyps, no.	227	207	
First inspection	104	58	
Second inspection	28	51	
Third inspection	95	98	
Miss rate 2nd/1st+2nd	0.21	0.47	0.000026
Miss rate 3rd/1st+2nd+3rd	0.42	0.47	0.25

**P* values are calculated by chi-squared test.
ADR, adenoma detection rate; NBI, narrow band imaging.

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