

Introduction:

Computer-aided detection (CAdE) systems and mucosal exposure devices (MED) have been demonstrated to increase polyp detection during colonoscopy and are hypothesised to have an additive effect. GIG and EV work by different mechanisms; EV acts to increase the amount of mucosa visualised and GIG to identify lesions on that exposed mucosa, thus GIG and EV in combination may synergistically increase detection of adenomas.

A randomised controlled trial by Spadaccini et al. (*Gastroenterology* 2023;165:244-251) showed that CAdE+MED was at least similar and probably better than CAdE alone when comparing adenoma detection rate (ADR) (relative risk = 1.12; 95% CI 1.00–1.26; p=0.04), but further work is required.

Methods:

COLO-DETECT assessed effectiveness of the GI Genius™ intelligent endoscopy module (GIG) in routine colonoscopy practice by comparing GIG-assisted colonoscopy (GGC) with standard colonoscopy (SC, without GIG or EV). Main results are reported elsewhere. We prospectively recorded mucosal exposure device (in this case, all EV) use in each arm, but did not use this to stratify randomisation. A post hoc analysis of mean adenomas per procedure (MAP) and ADR was undertaken between groups based on GIG and EV use (i.e. SC vs GIG+EV, EV vs GIG+EV, GIG vs GIG+EV).

COLO-DETECT was funded by Medtronic Ltd. who had no role in trial design, delivery, or reporting. Ethical approval was granted by NHS Research Ethics Committee.

Results:

2032 participants were recruited 29/03/21-06/04/23: GGC (1015) and SC (1017). No meaningful difference was apparent in EV use between the GGC and SC groups (9.4% vs 8.1% respectively).

Table 1: MAP and ADR (with p values) for GIG+EV vs GIG alone, vs EV alone, and vs SC.

	GIG+EV	GIG	p	GIG+EV	EV	p	GIG+EV	SC	p
MAP	1.95	1.25	<0.019	1.95	1.62	0.368	1.95	1.07	<0.003
ADR	70%	55%	0.007	70%	62%	0.330	70%	47%	<0.001

Conclusions:

Differences in MAP and ADR were detected for the comparison of GIG+EV to GIG alone and to SC.

These data and other recent trial data suggest that EV and GIG in combination enhance detection over and above GIG in isolation. In a 4-arm comparison MED, CAdE, and CAdE+MED each demonstrated improved detection vs standard colonoscopy (control), but it is uncertain whether any of MED, CAdE, or CAdE+MED is superior to each other (Aniwan et al., *Gastrointestinal Endoscopy* 2023; 97:507-516).

Future work will need to confirm whether detection is increased with GIG+EV vs GIG alone; a larger sample size using a MED will be required (the number of procedures in the current trial using EV was <100 in each arm), and care must be taken to eliminate confounders, including by randomising according to EV use, endoscopist, and colonoscopy indication.