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| Author(s) | Liu, KSH; But, DYK; Lam, YF; Hsu, ASJ; Seto, WK; Hung, IFN; Leung, WK |
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**NEW HIGH-DEFINITION NARROW BAND IMAGING VERSUS CONVENTIONAL HIGH-DEFINITION WHITE LIGHT COLONOSCOPY FOR DETECTION OF COLORECTAL ADENOMAS: A RANDOMISED CONTROLLED TRIAL WITH TANDEM COLONOSCOPY**

*SH Liu, YK But, YF Lam, SJ Hsu, WK Seto, FN Hung, WK Leung*

Department of Medicine, The University of Hong Kong, Queen Mary Hospital, Hong Kong

INTRODUCTION: Adenoma detection is important in colonoscopy as polypectomy has been shown to reduce the subsequent incidence and mortality of colorectal cancer. Narrow band imaging (NBI), an image-enhanced imaging system of the endoscopy, is developed to improve the diagnostic performance of the endoscopy. We tested whether the new generation of NBI colonoscopy would improve detection of colorectal adenoma when compared with high-definition white light (HD-WL) in a randomised tandem colonoscopy study.

METHODS: Patients were recruited from those undergoing scheduled colonoscopy for symptoms, screening, or surveillance. Colonoscopists involved were all experienced operators. Patients were randomised to the new NBI or HD-WL colonoscopy. Tandem colonoscopy was immediately performed in all patients by using the same assigned colonoscope. NBI was used on both withdrawals in the new NBI group and standard WL examination was used in the HD-WL group. The primary endpoint was adenoma detection rate, which was defined as the proportion of patients with at least one adenoma detected on first pass examination. Lesions detected on second-pass examination were considered to be missed lesions.

RESULTS: A total of 360 patients were randomised to receive the new NBI or HD-WL. Both the adenoma and polyp detection rates were significantly higher in the NBI group than in the HD-WL group (adenoma: 48.3% vs 34.4%, P = 0.01; polyps: 61.1% vs 48.3%, P = 0.02). The mean number of polyps detected per patient tended to be higher in the NBI group (1.49 vs 1.13, P = 0.07). There was no significant difference in the adenoma miss rates between the two groups (21.8% vs 21.2%). Eleven (6.5%) patients in the new NBI group and 16 (9.7%) patients in the HDWL group were found to be adenoma on tandem colonoscopy only (P = 0.32). Multivariate analysis found that the use of NBI (odds ratio [OR] = 2.09; 95% CI, 1.32-3.30), increasing age (OR = 1.05; 95% CI, 1.03-1.07), and male patients (OR = 3.03; 95% CI, 1.92-4.78) were associated with adenoma detection.

CONCLUSION: Our results suggested that the new NBI was superior to the conventional HD-WL in detecting colorectal adenoma.