Prospective diagnostic study on the use of narrow-band imaging on suspicious lesions during colonoscopy examination

ABSTRACT

Introduction: Colonoscopy is the gold standard to detect colorectal neoplasm. Narrow-band imaging (NBI) has a good diagnostic accuracy to differentiate between neoplastic and non-neoplastic colorectal lesions. This study explores the diagnostic validity of NBI colonoscopy as well as its associated factors related to neoplastic and non-neoplastic colorectal lesions. Methods: This study enrolled 100 patients in a single-center tertiary teaching hospital. Patients presented for screening colonoscopy, and those with suspicious colorectal lesions were included in this study. During colonoscopy, the most suspicious lesion in each patient was analyzed using the NBI system based on Sano's classification. Each lesion was biopsied for histopathological analysis, the gold standard. Endoscopic images were captured electronically. The sensitivity, specificity, and diagnostic accuracy of NBI colonoscopy were assessed. Other associated factors related to neoplastic and non-neoplastic lesions were analyzed accordingly. Results: The sensitivity and specificity of the NBI were 88.2% and 71.9%, respectively. The area under the receiver–operator curve was 0.801, indicating that NBI has a good ability to differentiate between disease and nondisease. There are significant associations between histopathological examination outcomes and both presenting symptoms, especially weight loss, and lesion site, even after other variables were controlled ($P < 0.05$). Conclusion: The NBI system in colonoscopy was capable of distinguishing neoplastic from non-neoplastic colorectal lesions. It indicates an acceptable level of agreement with histopathology, the gold standard. However, the role of NBI in screening and surveillance in Malaysia still needs further evaluation and exploration.