Diagnostic Performance of Linked Color Image (LCI) and Blue Laser Imaging (BLI) For the Diagnosis of Early Gastric Cancer: A Systematic Review and Meta-Analysis

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INTRODUCTION

- Overall prognosis of gastric cancer (GC) remains poor in the U.S. compared to other east Asian countries where it is more prevalent.
- This may be because GC is not diagnosed at an early stage where curative therapeutic options are available.
- Technologies like blue laser imaging (BLI) and linked color imaging (LCI) use an optimal light spectrum with advanced signal/image processing and high-intensity contrast. This allows for superior visualization of superficial vascular and mucosal patterns than the standard of white light imaging (WLI).
- The aim of this study was to conduct a systematic review and meta-analysis to evaluate the diagnostic utility of LCI and BLI for detecting early GC.

METHODS

Type: Meta-Analysis

Timeline: 2016-2022

Patients: Diagnosis of early gastric cancer using LCI or BLI

Size: 1,296 patients

Mean Age: 68.5 years-old

Inclusion Criteria: Studies with patients age <50 at diagnosis, with EGC diagnosed by LCI or BLI, excluding case reports and case series.

Analysis: A total of 5 studies were analyzed. Meta-analysis then pooled estimated rate of accuracy, sensitivity, and specificity of LCI or BLI in the diagnosis of early GC.

RESULTS

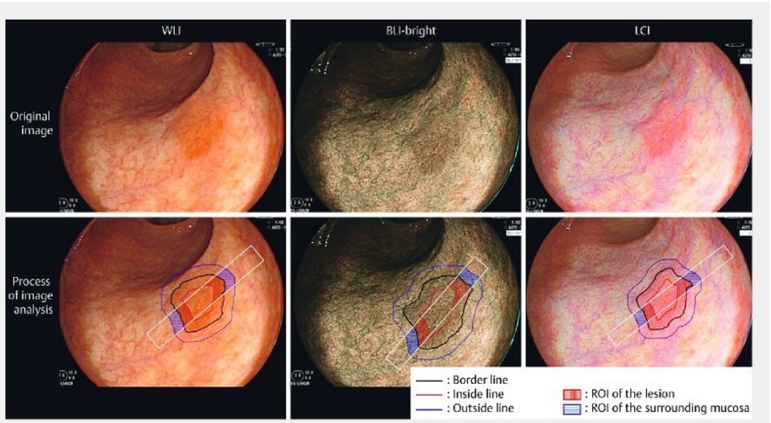

Figure 1: A comparison of WLI, BLI and LCI in ECD diagnosis from an analyzed paper.

Pooled Analysis Values	Percentage	Confidence interval
Sensitivity	95.8%	88.9 - 98.5%
Specificity	97.8%	84.2 – 99.7%
Diagnostic accuracy	86.0 – 97.5%	

Table 1: Pooled results of meta-analysis

CONCLUSIONS

Limitations: Limitations of our study was that it was a relatively small study sample size for a meta-analysis and that all studies were exclusively out of east Asian countries so generalizability to the U.S. may be low.

- ❖Linked color image (LCI) and blue laser imaging (BLI), has been reported to improve the visibility of superficial neoplastic changes in the stomach compared to standard white light image (WLI)
- ❖Compared to the current EGD standard of WLI, this meta-analysis shows that LCI and BLI are highly sensitive and specific in the diagnosis of early GC.
- ❖These enhanced imaging techniques are utilized in areas where gastric cancer is more prevalent With the higher diagnostic performance profiles, LCI and BLI are promising as a screening endoscopic modality for early GC in the U.S. as well
- ❖Further studies in a larger number of patients are warranted to validate the diagnostic performance of LCI and BLI in screening population.

Disclosures: The authors report no conflicts of interest

Figure 1: Kanzaki H, Takenaka R, Kawahara Y, et al. Linked color imaging (LCI), a novel image-enhanced endoscopy technology, emphasizes the color of early gastric cancer. *Endosc Int Open*. 2017;5(10):E1005-E1013. doi:10.1055/s-0043-117881