

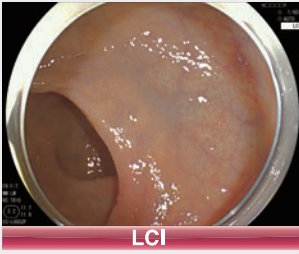

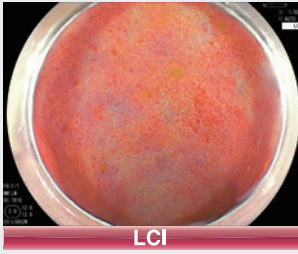

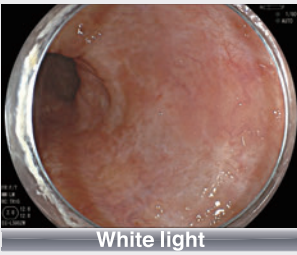

Assessment of Endoscopic Mucosal Healing of Ulcerative Colitis Using Linked Colour Imaging(LCI), a Novel Endoscopic Enhancement system

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New clinical evidence

LCI and LCI classification may be a novel approach to evaluate colonic mucosal inflammation and predict outcome in ulcerative colitis (UC) patients ⁽¹⁾.

LCI classification for ulcerative colitis

	LCI - A	LCI - B	LCI - C
Characteristics	No redness	Redness with visible vessels	Redness without visible vessels
Endoscopic finding LCI			
Endoscopic finding WLI			

Study Center

- Kyoto Prefectural University of Medicine

Back ground and aim

- Mucosal healing and control of intestinal mucosal inflammation are important treatment goals for maintaining clinical remission in ulcerative colitis (UC) patients.
- Linked Color Imaging (LCI) is a recently developed technology that uses a laser endoscopic system to enhance the color separation of red color to depict red and white colors more vividly. The Utility for the evaluation of colonic mucosa in UC patients has not been investigated.
- The aim of this study was to assess the efficacy of LCI, a novel endoscopic enhancement system, to diagnose mucosal inflammation in UC patients.

Study Design

- Study Design: A single center, prospective pilot trial
- Registration: June 1st, 2014 - March 31st, 2016
- Eligibility Criteria: Patients with established UC
- Equipment: Light Source LL-4450, Processor VP-4450HD, Colonoscope EC-L590ZW and EC-L600ZP
- Procedures:

52 patients with UC were enrolled, and 193 areas assessed by LCI were examined. LCI patterns were classified as A, no redness; B, redness with visible vessels; and C, redness without visible vessels. All of the 193 areas were diagnosed using both the LCI classification and the Mayo endoscopic subscore⁽²⁾ by one expert endoscopist (expert A) and two non-expert endoscopists (non-expert B and C). Biopsy specimens were taken and evaluated with Matts histopathological grade⁽³⁾. Thirty months was defined as the time interval between endoscopic diagnosis and relapse of UC.

Results

<Inter-observer agreement>

Inter-observer agreement for LCI classification was excellent between an expert and non-experts.

<The relationship between the Mayo endoscopic subscore and the LCI classification>

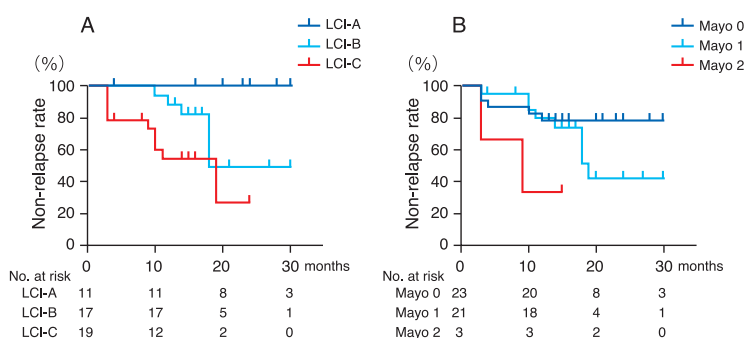
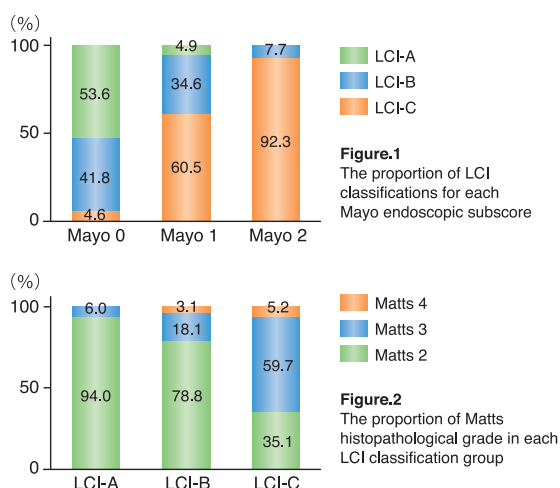
LCI classification was independent of the Mayo endoscopic subscore (Figure.1). In particular, it was possible to subdivide samples with a Mayo endoscopic subscore of 1 into LCI-B and -C classification based on mucosal redness recognized by LCI.

<The relationship between the LCI classification and Matts histopathological grade>

The endoscopic LCI classification reflected mucosal inflammation cell as assessed by Matts histopathological grading (Figure.2).

<Ulcerative colitis relapse>

Non-relapse rates significantly correlated with LCI classification ($p=0.0055$), but not with Mayo endoscopic subscore ($p=0.0632$). 14 patients experienced clinical relapse of UC. 64.3% (9/14) were diagnosed as LCI-C, 35.7% (5/14) as LCI-B, and none as LCI-A. On the other hand, 28.6% (4/14) were diagnosed as Mayo endoscopic subscore 0, 57.1% (8/14) as Mayo endoscopic subscore 1, and 14.3% (2/14) as Mayo endoscopic subscore 2 (Figure.3).



Conclusion

Endoscopic LCI classification can subdivide samples with the same Mayo endoscopic subscore. LCI may be a novel approach to evaluate colonic mucosal inflammation and predict outcome in UC patients.

Reference

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