

Red-flag Techniques for the Assessment of Pre-Neoplastic Gastric Lesions: Autofluorescence Imaging versus Virtual Chromoendoscopy

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Abstract

Background/Aim: The endoscopic diagnosis of preneoplastic lesions and early gastric cancer is based on subtle morphological changes, which are difficult to recognize during routine examinations. The study was performed in order to establish the role of autofluorescence imaging (AFI) and magnifying endoscopy with narrow band imaging (ME-NBI) for the diagnosis of premalignant gastric lesions.

Methods: The study included patients with dyspeptic symptoms and/or known risk factors for gastric cancer. Imaging consisted of white light endoscopy (WLE), followed by AFI and ME-NBI. Targeted biopsies were taken from all the highlighted lesions, regardless of the method. A statistical analysis was performed to compare the results.

Results: Sensitivity of AFI (94.74%) was superior to WLE and ME-NBI (78.95%). Specificity of AFI (65.33%) was however lower than the ME-NBI and WLE, with an accuracy of 71.27%. ME-NBI has high sensitivity, a much better specificity than AFI (92%) and a diagnostic accuracy of 89.36%. Trimodal endoscopy had an accuracy of 92.55%, which was superior to all other methods. Nevertheless, ME-NBI use had reduced the percentage of false positives from 27.65% to 6.38%, thus increasing specificity.

Conclusion: Trimodal endoscopy could be proposed as a standard endoscopic technique, as it is quick, safe and accurate for the diagnosis and surveillance of premalignant and malignant upper gastrointestinal tract lesions.

Key words: pre-neoplastic gastric lesions, early gastric cancer, autofluorescence imaging, magnifying endoscopy with narrow band imaging, virtual chromoendoscopy