

PWE-110

★ AN INTEROBSERVER AGREEMENT STUDY OF AUTOFLUORESCENCE ENDOSCOPY IN BARRETT'S OESOPHAGUS AMONG EXPERT ENDOSCOPISTS

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Introduction Autofluorescence imaging (AFI) is used as a 'red flag' technique during Barrett's surveillance to identify subtle abnormal lesions which are not evident in high resolution white light endoscopy (HRE). This technique was found to have significant false positive results, but the sensitivity remains high. The aim of this study was to assess the interobserver agreement in detecting dysplastic lesions and to assess the overall accuracy of AFI among expert endoscopists.

Methods Anonymised AFI and HRE images were prospectively collected from patients undergoing Barrett's surveillance and dysplasia work-up. The AFI images were presented on power point in random order, followed by corresponding HRE and AFI images in a second folder. Three expert endoscopists (>150 AF endoscopies) scored the work sheet on separate occasions after an automated training presentation. The interobserver agreement was calculated using κ values (bias corrected) and the accuracy was calculated with histology as gold standard.

Results 74 sets of anonymised white light and AFI images were prospectively collected from 63 patients (48 males, mean age 69). The interobserver agreement for number of AF lesions noted was fair with a κ value of 0.39 (95% CI 0.28 to 0.52) for AFI images which improved significantly ($p=0.04$) to moderate κ (0.57 and 95% CI 0.44 to 0.7) when corresponding AFI and HRE images are presented side by side. The interobserver agreement for the quadrant with most significant AF lesion was moderate with a κ of 0.48 (95% CI 0.37 to 0.6) which improved ($p=0.08$) to substantial κ 0.62 (95% CI 0.50 to 0.72) when corresponding images were presented. The sensitivity for dysplasia detection was 0.75 (95% CI -0.68 to 0.81) and 0.84 (95% CI 0.78 to 0.89) using AFI images alone and using corresponding images respectively. Similarly, the specificity was 0.76 (95% CI 0.71 to 0.81) and 0.85 (95% CI 0.8 to 0.89). The overall accuracy of detecting dysplasia was 0.76 (95% CI 0.7 to 0.81) using AFI images alone and 0.85 (95% CI 0.79 to 0.89) using corresponding HRE and AFI images.

Conclusion The interobserver agreement for dysplasia detection in Barrett's oesophagus using AFI images alone is only moderate among expert endoscopists, although it improved with addition of HRE. The overall accuracy of dysplasia using AF imaging was reasonable. Better understanding and recognition of what constitutes an AF positive signal on the endoscopic images is needed to improve this technique.

Competing interests J. Mannath: None Declared, V. Subramanian: None Declared, E. Telakis: None Declared, K. Lau: None Declared, K. Ragunath Grant/Research Support from: Olympus-Keymed, UK.

Keywords Autofluorescence imaging, Barrett's oesophagus, Dysplasia.