Endoscopic diagnosis: Advancing with imaging innovations or artificial intelligence?

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Digestive Oncology | Stomach & H. Pylori | Oesophagus | Endoscopy

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AI-assisted endoscopy improves detection of early gastrointestinal cancers and quality metrics compared to standard white light endoscopy, though the technology has important limitations and diagnostic decisions remain with the endoscopist.

KEY POINTS

- The speaker reported that in a randomised trial of 766 patients, AI-assisted colonoscopy achieved an adenoma detection rate of 57.5% compared to 44.5% with standard colonoscopy, and meta-analyses showed AI increased adenoma detection by approximately 20-22%.
- A study with eight trainee endoscopists showed that an AI quality assurance program significantly improved the completeness of upper GI endoscopic examinations by monitoring location coverage and time spent per anatomical area.
- Meta-analysis of 10-11 randomised controlled trials demonstrated that AI-assisted upper endoscopy improved early gastric cancer detection rates compared to standard examination.
- The speaker stated that image-enhanced endoscopy techniques such as NBI improved detection and characterisation of early GI neoplasia, though newer technologies like TXI did not establish superiority over white light in trials despite enhancing lesion conspicuity.
- AI limitations include variation in training data quality, lack of personalisation, potential for endoscopists to ignore AI alerts, and differences between real-world and controlled trial performance.
- The speaker's group is developing AI guidance for endoscopic submucosal dissection based on 200-300 gastric ESD cases to improve dissection trajectory precision and reduce complications.

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