

AI Essentials: Basics and upper GI (UEG Talks rewind)

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Podcast Episode

Endoscopy

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Two gastroenterology AI experts discuss the fundamental concepts of artificial intelligence in endoscopy, the development and validation of AI systems, and the current state and expected value of AI applications in upper gastrointestinal tract imaging, particularly for Barrett's dysplasia detection.

KEY POINTS

- AI systems in endoscopy are 'narrow AI' trained for specific tasks and cannot be generalised across diseases; each new system requires separate regulatory approval even for the same indication, analogous to individual drug trials within a therapeutic class.
- Robust AI development requires diverse training data, external validation on unseen datasets, and the system should perform consistently across different centres and endoscopy equipment providers.
- The speakers argue that the expected value of AI in Barrett's oesophagus is to elevate the dysplasia detection performance of non-expert endoscopists to expert level, rather than to surpass expert performance.
- As of 2024, only one AI system for upper GI tract applications has received regulatory approval; the speakers anticipate additional Barrett's detection and characterisation systems within 2 to 3 years, while systems for squamous cell cancer and gastric pathology face greater data scarcity in Western populations.
- Evidence remains insufficient to demonstrate that real-time AI-guided targeted biopsies in Barrett's oesophagus yield more neoplasia per patient than meticulous standard-of-care protocols combining virtual chromoendoscopy and Seattle biopsy sampling.

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