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GI learning, personalised

Summary

The role of AI in GI oncology: Complementing or replacing the clinician?

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The speaker reviewed current applications and limitations of artificial intelligence in gastrointestinal oncology, emphasizing that while AI shows promise in endoscopy, drug development, and precision medicine, prospective validation remains essential and AI will augment rather than replace clinicians.

KEY POINTS

- The speaker reported that a Barrett's esophagus computer-aided detection system trained on 14,000 images increased sensitivity for neoplasia detection from 75% to 99% and outperformed general endoscopists, but cautioned that overreliance on AI can lead to de-skilling, with one study showing performance declined by an average of six points after AI implementation.
- A Chinese study of AI for gastric neoplasm detection showed no significant improvement in detection rates compared to standard endoscopy, with a relative risk of 1.19 and a non-significant p-value, illustrating that AI is not always better with available tools.
- The speaker described a pancreatic cancer early detection algorithm that identified occult tumors at a median 575-day lead time in CT scans, but noted the positive predictive value was only 36% at simulated 1-to-6 prevalence and would drop to 3.8% at 1% prevalence, with the real prevalence being 0.021%.
- A French group's algorithm predicted benefit from adjuvant gemcitabine in pancreatic cancer with performance comparable to modified FOLFIRINOX but lower toxicity, validated in an external trial cohort, though prospective validation is pending.
- The speaker stated that AI-based tools now enable monoclonal antibody development from bench to phase one studies within a year and facilitate novel drug design through protein folding prediction, fundamentally changing drug development timelines.

– In the Q&A, the speaker expressed the view that tumor boards are ideal for AI decision support systems because oncology data are highly structured with standardized TNM staging and pathology, and such systems could improve efficiency by identifying missing information needed for case discussions.

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