CLOUD-BASED ARTIFICIAL INTELLIGENCE FOR DETECTION OF COLORECTAL NEOPLASIA – A RANDOMIZED CONTROLLED TRIAL (EAGLE TRIAL)

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Colorectal

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A prospective international multi-centre randomized controlled trial demonstrated that the cloud-based CADDIE Computer-Aided Detection system significantly improved adenoma detection rate and adenomas per colonoscopy compared to standard colonoscopy in average-risk screening and surveillance patients.

KEY POINTS

- The CADDIE-assisted colonoscopy arm significantly increased adenomas per colonoscopy by 33 percent (0.62 vs 0.82, ratio 1.33, 95 percent CI 1.06-1.67, p=0.01) and adenoma detection rate by 7.3 percentage points (35.9 percent vs 43.2 percent, p=0.03) compared to standard colonoscopy.
- Detection of sessile serrated lesions per colonoscopy more than tripled with CADDIE assistance (0.03 vs 0.08, ratio 3.30, 95 percent CI 1.41-7.57, p<0.01), and detection of large adenomas and large polyps approximately doubled.
- The system achieved non-inferiority for Positive Percent Agreement (53.4 percent vs 53.9 percent) with no increase in unnecessary resections, demonstrating safety.
- The trial included 841 participants and 22 endoscopists with baseline adenoma detection rates of at least 25 percent across eight centres in four European countries.
- CADDIE is a cloud-based system that processes live endoscopy images via hospital internet network and overlays real-time bounding boxes to highlight suspected polyps.

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