

**Vennalaganti PR, Kaul V, Wang KK, et al. Increased detection of Barrett's esophagus-associated neoplasia using Wide-Area Trans-epithelial Sampling: A multicenter, prospective, randomized trial. *Gastrointest Endosc* 2018;87(2):348-355.**

**BACKGROUND AND AIMS:** Wide-area transepithelial sampling (WATS) with computer-assisted 3-dimensional analysis is a sampling technique that combines abrasive brushing of the Barrett's esophagus (BE) mucosa followed by neural network analysis to highlight abnormal-appearing cells.

**METHODS:** We performed a randomized trial of referred BE patients undergoing surveillance at 16 medical centers. Subjects received either biopsy sampling followed by WATS or WATS followed by biopsy sampling. The primary outcome was rate of detection of high-grade dysplasia/esophageal adenocarcinoma (HGD/EAC) using WATS in conjunction with biopsy sampling compared with biopsy sampling alone using standard histopathologic criteria. Secondary aims included evaluating neoplasia detection rates based on the procedure order (WATS vs. biopsy sampling first), of each procedure separately, and the additional time required for WATS.

**RESULTS:** One hundred sixty patients (mean age, 63.4 years; 76% men; 95% white) completed the trial. The median circumferential and maximal BE extents were 1.0 cm (interquartile range: .0-5.0) and 4.0 cm (interquartile range, 2.0-8.0), respectively. The diagnostic yield for biopsy sampling alone was as follows: HGD/EAC, 7 (4.4%); low-grade dysplasia (LGD), 28 (17.5%); non-dysplastic BE (NDBE), 106 (66.25%); and no BE, 19 (11.9%). The addition of WATS to biopsy sampling yielded an additional 23 cases of HGD/EAC (absolute increase, 14.4%; 95% confidence interval, 7.5%-21.2%). Among these 23 patients, 11 were classified by biopsy sampling as NDBE and 12 as LGD/indefinite for dysplasia (IND); 14 received biopsy sampling first and 9 WATS first (not significant) and most (n = 21; 91.7%) had a prior dysplasia history. WATS added an average of 4.5 minutes to the procedure.

**CONCLUSION:** Results of this multicenter, prospective, randomized trial demonstrate that the use of WATS in a referral BE population increases the detection of HGD/EAC. (Clinical trial registration number: NCT03008980.)

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