

Statin and NSAID Use Is Associated With Lower Incidence of Esophageal Adenocarcinoma in High-Risk Persons

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C Mason

Barrett's esophagus is a condition characterized by the replacement of normal squamous epithelium in the esophagus with metaplastic columnar epithelium, and has a strong association with esophageal adenocarcinoma. Because the incidence of esophageal adenocarcinoma continues to rise and its prognosis remains poor, patients with Barrett's represent an identifiable high-risk group for targeted prevention efforts.

Previous studies have suggested a possible protective effect for esophageal adenocarcinoma associated with the use of non-steroidal anti-inflammatory drugs (NSAIDs), but their use has not been formally recommended for cancer prevention. Statins, a group of drugs conventionally used to lower cholesterol, may also inhibit the progression of cancer, but they have not been as widely investigated with respect to esophageal cancers.

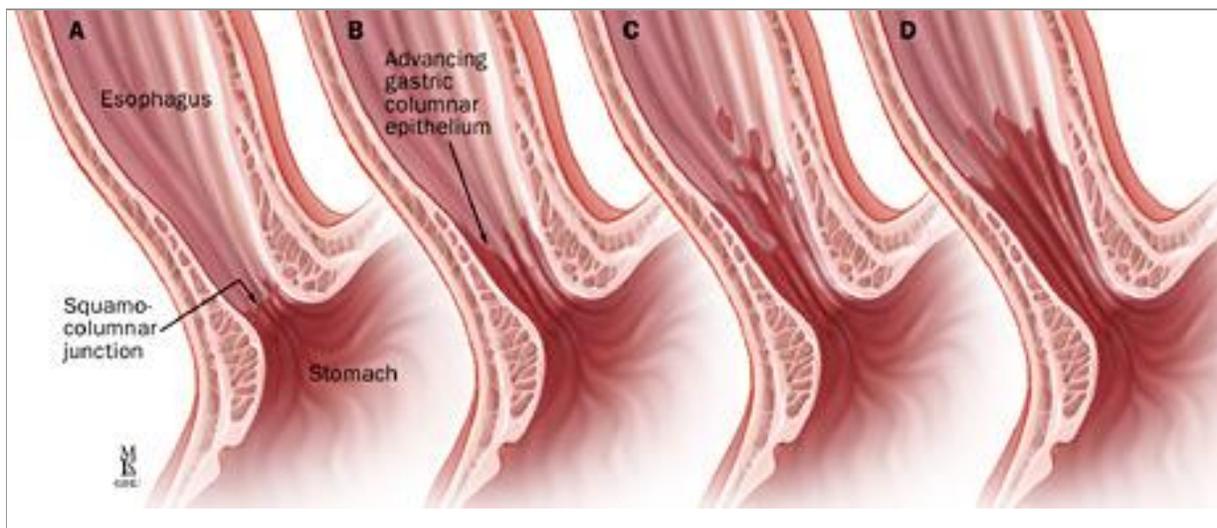
Recently, graduate student Elizabeth Kantor and faculty supervisor Dr. Tom Vaughan from the Public Health Sciences Division published data from 395 participants of the Seattle Barrett's Esophagus Study who were followed between 1995 and 2009, with a median four serial interviews and endoscopies. Seventy-two percent of participants reported NSAID use and thirty-five percent of participants reported statin use at baseline or during the follow-up period.

Compared to non-use, statin use was associated with a 32 percent reduced risk (Hazard Ratio (HR) 0.68; 95% Confidence Interval (CI) 0.30-1.54) of progression to esophageal adenocarcinoma in the overall sample after adjusting for age, sex, smoking and NSAID use. In comparison, NSAID use was associated with a 38 percent reduction in risk (HR 0.62; 95% CI 0.34-1.10) after adjustment for the same covariates and statin use. In a relatively small subset (n=69) of patients with the highest risk of developing adenocarcinoma, those with high grade dysplasia, statin use was associated with a 59 percent risk reduction (HR 0.41; 95% CI 0.13-1.26) while NSAID use was associated with 63 percent risk reduction (HR 0.37; 95% CI 0.17-0.83). Further, in this particularly high-risk group (30 cases esophageal adenocarcinoma), joint statin and NSAID use was associated with a statistically

significant 81 percent reduced risk (HR 0.19; 95% CI 0.06-0.64) compared to persons taking neither drug - a stronger effect than observed in participants using either class of drug on its own.

Further work to better understand the mechanisms and effects of different sub-types, dosages, and periods of statin use among patients with Barrett's esophagus will help determine the effectiveness of statins as potential chemoprotective agents, alone or in combination with NSAIDs.

[Kantor ED, Onstad L, Bount PL, Reid BJ, Vaughan TL](#). 2012. Use of statin medications and risk of esophageal adenocarcinoma in persons with Barrett's esophagus. *Cancer Epidemiology, Biomarkers and Prevention*, Epub ahead of print, doi: 10.1158/1055-9965.EPI-11-1014.



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A, Normal esophageal epithelium; B-D, variants of Barrett's esophagus