Predictors of Progression to Cancer in Barrett's Esophagus: Baseline Histology and Flow Cytometry Identify Low-and High-Risk Patient Subsets

Reviewers: Li Liu, MD

Introduction
Barrett's esophagus is a complication of gastroesophageal reflux disease in which metaplastic epithelium replaces the normal squamous lining. The significance of Barrett's lies in its potential to develop into adenocarcinoma. Virtually all cases of adenocarcinoma of the esophagus occur in the setting of Barrett's esophagus. In this study, the researchers attempted to identify patient subsets at low and high risk for progression to cancer.

Materials and Methods
A total of 322 patients with Barrett's esophagus were evaluated using endoscopic biopsy.

Results
- 41 cancers were detected, 34 of which were diagnosed within 5 years of baseline.
- In the absence of aneuploidy and increased 4N fractions (Normal cells contain 2N chromosomes. Higher fraction of cells containing abnormal amount of chromosomes indicates cell proliferation and potential of malignant transformation.), patients with low grade dysplasia had a 0% 5-year cumulative cancer incidence, compared with 28% for those with either aneuploidy or increased 4N.
- Baseline increased 4N, aneuploidy, and high-grade dysplasia were associated with 5-year cancer incidence of 56%, 43%, and 59%, respectively.

Discussion
In this study, aneuploidy, increased 4N fractions, or high-grade dysplasia identified by endoscopic biopsy were associated with high risk of progression to cancer in patients with Barrett's esophagus. A better estimate of the incidence of adenocarcinoma in Barrett's esophagus is important, primarily to define appropriate clinical surveillance guidelines.