Signet Ring Cell Carcinoma of the Esophagus

Kevin Turner¹,², Robert M. Genta¹,², Amnon Sonnenberg¹
¹Miraca Life Sciences Research Institute, Irving, Texas; ²University of Texas Southwestern Medical Center, Dallas, Texas; ³Portland VA Medical Center, Portland, Oregon

Background
Signet ring cell carcinoma is a histologic variant of adenocarcinoma characterized by a population of loose tumor cells whose cytoplasm appears almost entirely occupied by mucin. In rare instances, signet ring cell carcinoma occurs at the gastroesophageal junction without association to any such primary lesion in other areas of the stomach.

Aims
The aim of the present cross-sectional study was to compare the clinical epidemiology of esophageal signet ring cell carcinoma with two groups of patients: those with non-signet ring esophageal adenocarcinoma and those with Barrett’s esophagus without cancer.

Methods
Miraca Life Sciences is a specialized gastrointestinal laboratory, serving private outpatient endoscopy centers distributed throughout the entire United States. Over 1,500 individual gastroenterologists contributed to the database between Jan. 2008 and Dec. 2014.

From a total of 487,587 patients who had EGD with biopsies during the study period, we extracted the demographic, clinical, and histopathologic data of all patients who had a diagnosis of esophageal signet ring cell carcinoma, esophageal adenocarcinoma (EAC), or Barrett’s esophagus (BE).

Socio-economic information was available from census data associated with the patients’ postal address and ZIP codes.

Results
About 9% of all adenocarcinomas at the gastroesophageal junction harbored features of signet ring cell carcinoma.

Patients with both cancer types were slightly older than those with Barrett’s esophagus and showed a striking male predominance.

Both cancer types were associated with a similar set of alarm symptoms, such as dysphagia, pain, and weight loss.

The distribution by race (Whites vs. Blacks) and socio-economic parameters (levels of college education or annual income) were similar among the 3 patient groups.

Conclusion
Patients with signet ring cell cancer are characterized by the same set of epidemiologic characteristics as patients with regular esophageal adenocarcinoma. The reasons why a minority of reflux patients progress to develop signet ring cell cancer rather than the usual type of esophageal adenocarcinoma remain presently unknown.

Conflicts of interest: None. Pursuant to 45 CFR 46, section 101b (4) – research was reviewed by Miraca Life Sciences Research Institute IRB.