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Surveillance Intervals After Radiofrequency Ablation for Barrett's Esophagus

In 2 prospective cohorts, histologic grade of intestinal metaplasia before radiofrequency ablation for Barrett's esophagus predicts recurrent neoplasia and can be used to determine surveillance intervals.

Barrett's esophagus, the only established precursor to esophageal adenocarcinoma, can be treated effectively and safely with radiofrequency ablation. Although most patients achieve durable response after complete eradication of intestinal metaplasia, ≥25% of patients have recurrence of intestinal metaplasia and ≥1% of patients have recurrence with invasive adenocarcinoma. Although surveillance endoscopy is usually performed to identify and treat recurrence, this practice varies widely and is based largely on expert opinion. In this issue of *Gastroenterology*, Cotton et al used 2 large registries of patients undergoing radiofrequency ablation for Barrett's esophagus in the United States and the UK to build and validate models to predict risk of recurrence after complete ablation. The incidence of neoplastic recurrence was associated with the most severe histologic grade before ablation, age, sex, baseline Barrett's esophagus length, and performance of endoscopic mucosal resection. A model based solely on the most severe histologic grade predicted neoplastic recurrence with c-statistics of 0.892 (95% confidence interval, 0.863-0.921) in the US cohort and 0.728 (95% confidence interval, 0.584-0.871) in the UK validation cohort. For patients with low-grade dysplasia before ablation, the authors propose surveillance endoscopy at 1 and 3 years after complete eradication. For patients with high-grade dysplasia or intramucosal adenocarcinoma, the authors propose surveillance intervals at 3 months, 6 months, 1 year, then annually thereafter. Although these findings warrant further corroboration, this study is among the first to provide evidence regarding optimizing surveillance endoscopy for Barrett's esophagus.

See page 316.

Serious and Opportunistic Infection After Immunosuppressive Therapy for Inflammatory Bowel Disease

In a French nationwide cohort, the combination of tumor necrosis factor antagonists and thiopurine therapies was associated with a greater risk of serious and opportunistic infection in patients with inflammatory bowel disease.

Combinations of immunosuppressive therapies, including tumor necrosis factor antagonists and thiopurines, have demonstrated superior efficacy over monotherapy with either agent in the management of inflammatory bowel disease. Previous studies have shown an increased risk of serious and opportunistic infection in patients treated with monotherapy (Figure 1). However, whether combination immunosuppressive therapy further increases the risk of infection is less known. In this issue of *Gastroenterology*, Kirchgesner et al identified 190,694 patients with inflammatory

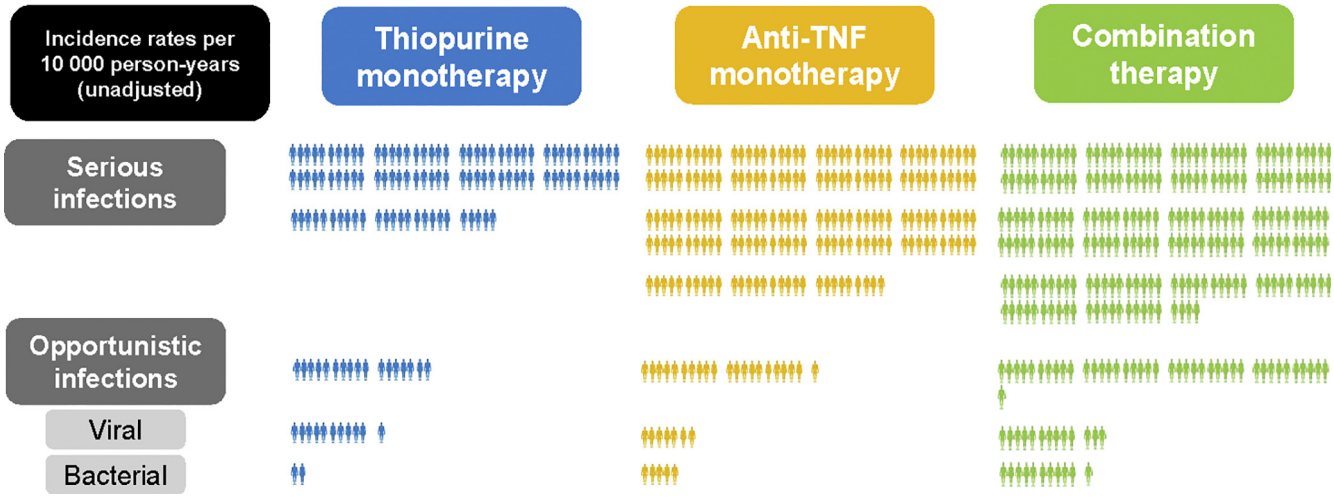

Figure 1. Risk of serious and opportunistic infections after thiopurine monotherapy, tumor necrosis factor (TNF) antagonist monotherapy, and combination therapies in patients with inflammatory bowel disease. Combination therapy is associated with a higher risk of serious and opportunistic infections compared with monotherapy of either agent.

bowel disease from 2009 to 2014 in a French administrative health database. Roughly 33% of patients had been exposed to immunosuppressive therapies. Combination therapy was associated with increased risk of serious infection (defined as a diagnosis of infection requiring hospitalization) compared with tumor necrosis factor antagonist (hazard ratio [HR], 1.23; 95% confidence interval [CI], 1.05-1.45) or thiopurine monotherapy (HR, 2.11; 95% CI, 1.80-2.48). Tumor necrosis factor antagonist monotherapy was associated with a higher risk of serious infection (HR, 1.71; 95% CI, 1.56-1.88) compared with thiopurine monotherapy. Among patients with serious infections, 3.9% died within 3 months after infection occurrence. Similarly, combination therapy was also associated with increased risk of opportunistic infection compared with tumor necrosis factor antagonist (HR, 1.96; 95% CI, 1.32-2.91) or thiopurine monotherapy (HR, 2.11; 95% CI, 1.45-3.08). This study provides real-world evidence regarding the risk of severe and opportunistic infections in patients treated with thiopurines, tumor necrosis factor antagonists, and their combination. These data will be important to incorporate into the clinical decision making for optimal management of inflammatory bowel disease.

See page 337; editorial on page 262.

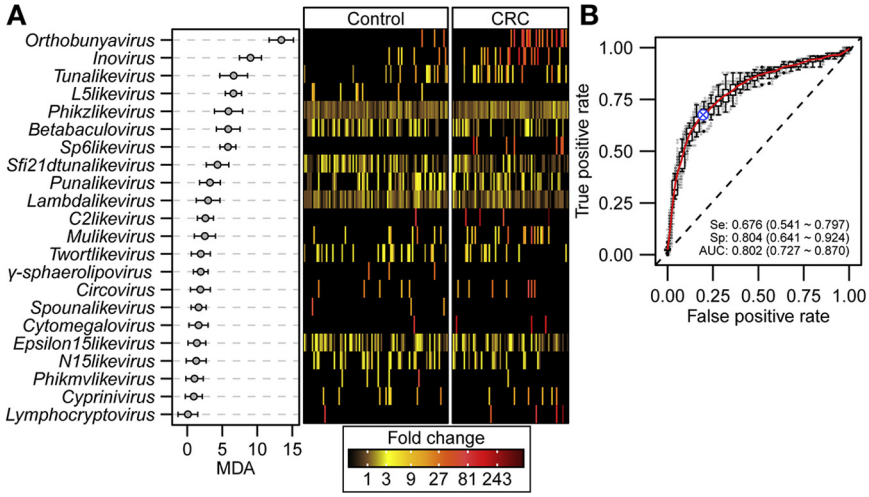

Figure 2. (*A*) Dotplot (*left*) showing the average importance score and ranking of most discriminatory viral genus-level markers identified by RF-BFE selection. *Error bars* represent standard deviations of mean decrease in accuracy from 100 iterations of discovery model fit. Heatmap (*right*) showing the relative fold change of virome markers against mean normalized abundance of control group. Samples in column (*left* to *right*) are sorted in increasing order of average case-class probabilities determined by 10-times–repeated 10-fold model cross-validations. (*B*) Internal 10-times–repeated 10-fold cross-validations of CRC virome-based metagenomic classifier. Red line represents average true and false positive rates. Greyed-out dots show each individual round of 10-fold model cross-validations summarized by boxplots.

Enteric Virome and Colorectal Cancer

Changes in the gut virome discriminate between patients with colorectal cancer and controls and may be used for stage specification and prognostication.

Increasingly, researchers have recognized the importance of host–microbial interactions in the pathogenesis of colorectal cancer (CRC) with most efforts focusing on bacterial microbiome identification and characterization. Studies have established links between the CRC development and other disease processes such as obesity, inflammatory bowel disease, and components of the metabolic syndrome. Shifts in gut bacterial populations can also affect the distributions of viral and fungal

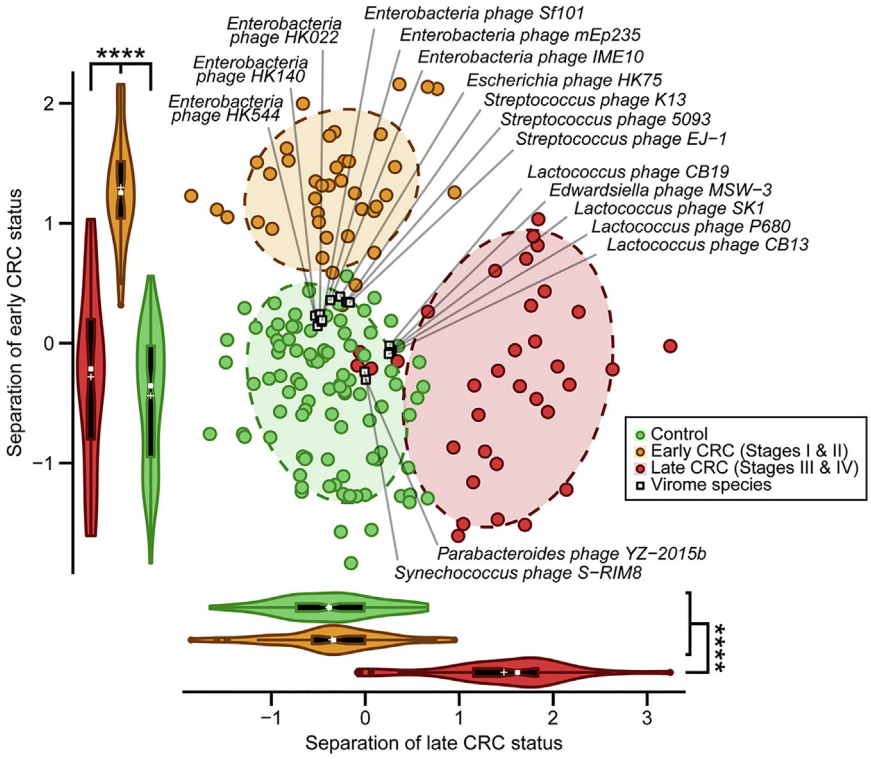

Figure 3. Clinical stage–associated dysbiosis of the gut virome in CRC. Biplot summarizing Canberra distance–based partial redundancy analysis of virome species-level profiles, controlling for compositional effects of age, sex, obesity, diabetes mellitus, and use of oral prescription drugs. Viral species that correlate with both constrained axes at false discovery rates of 5% (Spearman ρ) or less are shown. Projection axes were assessed individually by Wilcoxon rank-sum tests. *P* values were adjusted for multiple-hypothesis testing by Benjamini-Hochberg step-up procedures. ****$Q < .0001$.