Bi-directional Association Between Mood Disorders and Functional Gastrointestinal Diseases

Cross-sectional studies and clinical experience suggest there is a higher prevalence of depression and anxiety in patients with functional gastrointestinal diseases (FGID). To what extent this reflects the impact of disease symptoms on mood and whether mood disorders precede and may indeed be causally implicated in the pathogenesis of FGID has not been well established. In this issue of *Clinical Gastroenterology and Hepatology*, Jones et al present a study that examined the bidirectional association between mood disorders and FGID in two population-based databases. First, using the Health Improvement Network (THIN) database capturing data from general practices across the United Kingdom, they identified 4966 patients treated for at least one FGID or mood disorder. In nearly two-thirds of the patients (66%; 95% CI, 65%–67%), the diagnosis of mood disorder preceded the diagnosis of FGID, ranging from 73% for dyspepsia to 86% for constipation. The likelihood of a mood disorder preceding FGID was greater in women compared to men (odds ratio (OR), 1.29; 95% CI, 1.13–1.48) and in those with higher compared to lower socioeconomic deprivation (OR, 1.07; 95% CI, 1.02–1.11). The median interval between the diagnosis of mood disorder and FGID was 3.5 years (5.5 years for IBS, 8 years for constipation). In contrast, individuals with FGID who developed mood disorders did so at a median of 1.8 years after diagnosis (Figure 1). In a population-based sample of 1002 individuals in western Sydney, Australia, the authors demonstrate that a similar proportion of patients with mood disorders at baseline developed FGID upon follow up (47%) ("brain-gut" cohort) as vice

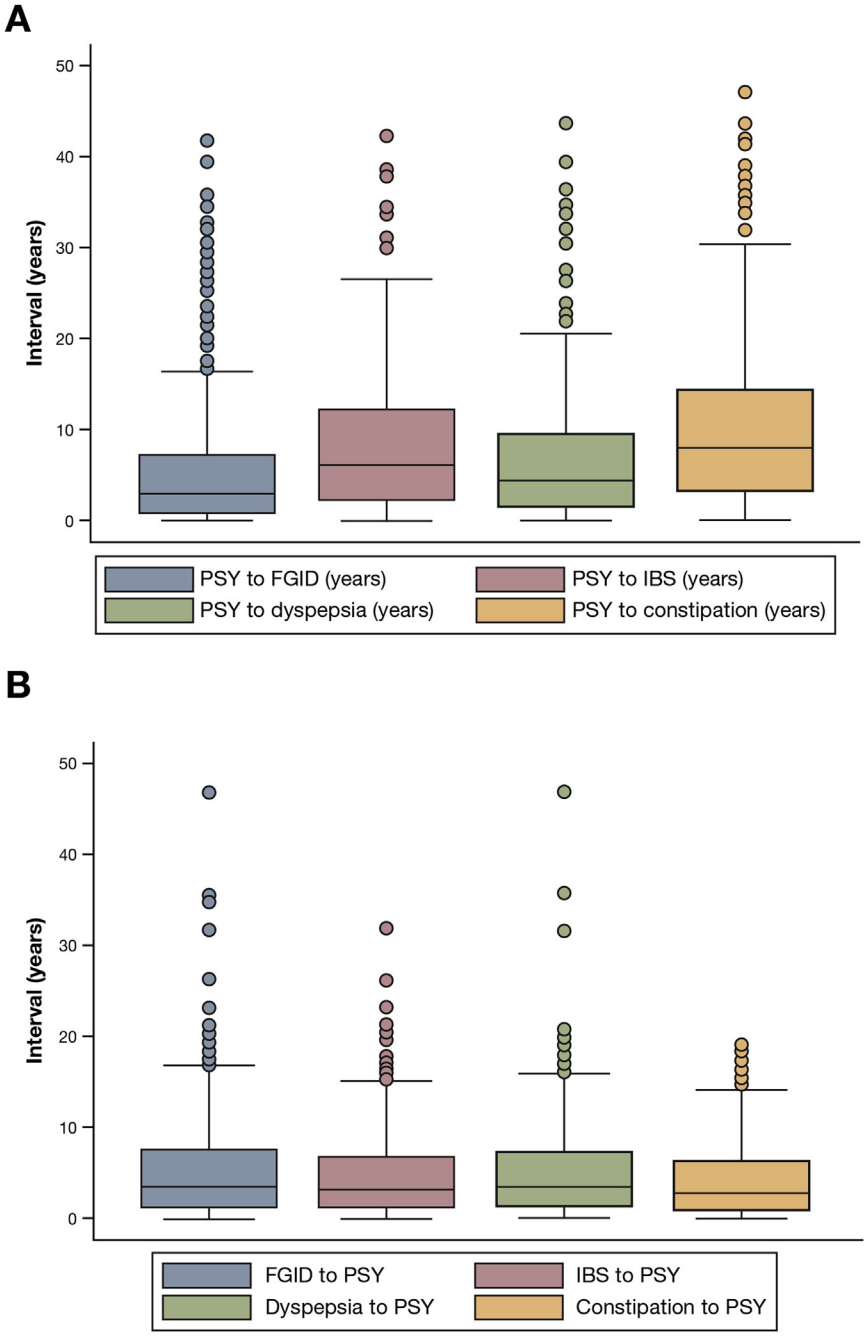


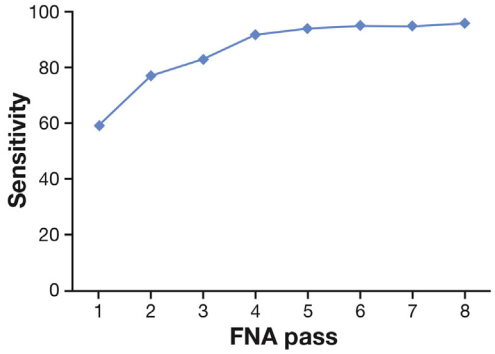
Figure 1. Distribution of intervals between (*A*) mood or anxiety disorder diagnosis and FGID diagnosis and (*B*) FGID diagnosis and mood or anxiety disorder diagnosis via box plots. *Circles* represent outlying individuals (above the 95th percentile). A small number of extreme values have been omitted from the figures to preserve graphical resolution. PSY, mood or anxiety disorder diagnosis.

versa (53% with FGID at baseline developed mood disorders at follow-up) ("gut-brain" cohort). Anxiety, depression, and neuroticism were more frequent in those with the 'brain-gut' order of diagnosis. Together, these data support a bidirectional link between the brain and the gut. The article by Jones et al also provides an estimate of the window whereby interventions may reduce incidence of FGID in those with mood disorders at baseline and vice versa to prevent depression and anxiety in those with established FGID. With the prevalence and morbidity associated with both conditions, there is an important need for research to identify effective interventions that would achieve these goals.

See page 1014.

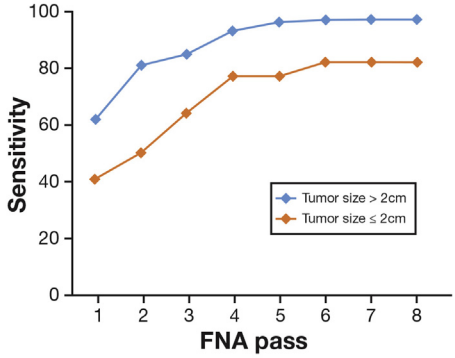
EUS-FNA for Pancreatic Cancer – Four Is Enough!

Endoscopic ultrasound-fine needle aspiration (EUS-FNA) is a key to establish diagnosis of pancreatic cancer. However, the yield of this procedure is often variable and requires multiple needle passes to obtain sufficiently diagnostic material. Prior literature about the adequate number of passes to achieve sufficient sensitivity has been conflicting. In this issue, Mohamadnejad et al present a secondary analysis of their randomized controlled trial that examined the utility of on-site cytopathologic evaluation (OCE) in diagnosing pancreatic cancer. A total of 239 patients with solid pancreatic masses were assigned to EUS-FNA with or without OCE at three tertiary referral centers. Most patients (84.5%) were diagnosed with pancreatic cancer at the index procedure or within 1 year of follow-up. The overall sensitivity of EUS-FNA in diagnosing pancreatic cancer was 96% (95% CI 92 – 98%). However, there was little gain in sensitivity after four passes (Figure 2). The sensitivity for 4 passes (92%) was significantly higher than that for 3 passes (83%) but similar to that for 5 passes (94%) and beyond. Analysis stratified by tumor size (< 2 cm or > 2 cm) yielded similar results (sensitivity of 4 passes for tumor < 2 cm or > 2 cm was 77% and 93% respectively compared to 77% and 96% for 5 passes) (Figure 3). The same results were observed when stratifying by presence of OCE (Figure 4). This useful study demonstrates that a cap of 4 needle passes for



	Pass 1	Pass 2	Pass 3	Pass 4	Pass 5	Pass 6	Pass 7	Pass 8
Sensitivity	59%	77%	83%	92%	94%	95%	95%	96%
95% CI	53-66	71-82	77-87	87-95	89-96	91-97	91-97	92-98

Figure 2. Cumulative sensitivity of EUS-FNA with each FNA pass based on cytology classification 1.



> 2cm	Pass 1	Pass 2	Pass 3	Pass 4	Pass 5	Pass 6	Pass 7	Pass 8
Sensitivity	62%	81%	85%	93%	96%	97%	97%	97%
95% CI	64-68	74-86	79-89	89-96	91-98	93-98	93-98	94-99
≤ 2cm								
Sensitivity	41%	50%	64%	77%	77%	82%	82%	82%
95% CI	23-61	31-69	43-80	57-90	57-90	61-93	61-93	61-93

Figure 3. Cumulative sensitivity of EUS-FNA with each FNA pass in mass lesions ≤2 cm vs >2 cm based on cytology classification 1.