

DGBI overlap: a model for a transdiagnostic approach?



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Disorders of gut-brain interaction (DGBI) are highly prevalent chronic gastrointestinal symptoms that are categorised into 33 disorders delineated by gastrointestinal anatomic region.¹ DGBI can occur in isolation, but frequently are present in combinations that affect multiple anatomic regions. The coexistence of multiple DGBI in an individual, termed overlap, has been linked to worse disease severity and quality of life.² However, the actual prevalence of DGBI overlap and associated features have remained unknown until Thomas Fairlie and colleagues³ conducted a systematic review and meta-analysis on the topic. Among 46 studies including 75 682 adults with DGBI, the authors found that over a third (n=24 424, pooled prevalence 36.5% [95% CI 30.7–42.6]) had DGBI overlap.³ Overlap occurred more frequently in participants recruited from tertiary health-care settings, suggesting worse gastrointestinal symptoms, and was associated with increased psychological symptom severity and lower quality of life scores. Taken together, the authors conclude that overlap is common and a feature of DGBI disease severity.

This study, and others examining DGBI overlap,² raise the question of whether overlap represents multiple distinct diagnoses or if a unifying underlying mechanism creates a spectrum of disease, with overlap existing at one end of the spectrum. The Rome IV classification of symptoms into anatomically based disorders uses a traditional disease model, in which symptoms are believed to be explained by an underlying disorder localised to the anatomic area from which they originate. For example, the symptoms of at least weekly abdominal pain associated with altered bowel habits are believed to be attributed to a disorder called irritable bowel syndrome. However, other fields of symptom-based disorders, including psychiatry⁴ and pain medicine,⁵ are moving toward viewing symptoms along a spectrum (ie, transdiagnostically). The transdiagnostic viewpoint recognises that the boundaries between both symptoms and associated biological processes are not neatly delineated, and that diverse diagnoses might be due to similar underlying mechanisms. Given the heterogeneity of presentations and biopsychosocial underpinnings in DGBI, a transdiagnostic approach could be particularly useful. In

DGBI overlap, multiple DGBI diagnoses, treated as distinct entities, (eg, irritable bowel syndrome and functional dyspepsia) could be due to the same centrally mediated mechanisms, such as visceral hypersensitivity, gastrointestinal-specific anxiety, altered mucosal permeability, or autonomic dysregulation.⁶ Fairlie and colleagues acknowledge this concept by speculating that the increased symptom severity in patients with overlap might be due to a unifying, top-down central mechanism—such as pain perception and processing—rather than multiple, distinct bottom-up causes from the gastrointestinal luminal or peripheral factors.³

Our grasp of DGBI overlap is made even more crucial when viewed in the setting of our poor understanding of the key mechanisms through which treatments work and which treatments work best for whom. Reliance on disorder-based categories could drive two problems. First, our current treatment paradigm with disorder-specific therapeutics (eg, X medication for irritable bowel syndrome) does not consider individual variation—two patients with irritable bowel syndrome can have both different symptom manifestations and different underlying mechanisms driving symptoms. Second, patients with DGBI overlap are currently often managed by prioritising treatment that is specific to their most bothersome DGBI. Emerging investigations support that treatments are not one size fits all, showing that abdominal pain, rather than bowel symptoms, drives assessment of constipation severity in patients with constipation,⁷ and that patients with greater avoidance behaviours around their symptoms respond better to certain behavioral interventions.⁸ Some DGBI treatments, like neuromodulators with multiple targets (eg, tricyclic antidepressants) or brain-gut behaviour therapies (eg, cognitive-behavioural therapy) also transcend specific symptoms and could target shared underlying mechanisms of DGBI overlap. Fairlie and colleagues' findings that patients with DGBI overlap have a higher psychological burden than those with a single DGBI suggests that there might be a psychologically mediated underlying mechanism for some—eg, treating one central symptom (eg, hypervigilance) could improve other connected ones (eg, pain or nausea).

We need more research on alternatives to the traditional disease model for DGBI. Analytic approaches

agnostic to disorder-based classification are promising for understanding DGBI from a transdiagnostic perspective. For example, cluster analysis is a technique that can be used to take all candidate biopsychosocial mechanisms and evaluate which clusters of factors respond the best to which treatments; network analysis can be used to understand the interconnected, dynamic relationships among symptoms and potential underlying mechanisms to identify which factors might be the most important to target with a treatment. Fairlie and colleagues' findings on DGBI overlap support a paradigm shift in DGBI classification and management—one in which we stop assigning symptom-based diagnoses and start targeting underlying mechanisms that exist across symptom spectra.

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