Characteristics of the Co-Morbidity of Irritable Bowel Syndrome: A Secondary Analysis of Existing Twin Data

Mary K. Wojczynski
University of North Carolina at Chapel Hill

Abstract:

Irritable bowel syndrome (IBS) is a chronic disorder whose manifestations typically fluctuate over time. Prior epidemiologic studies estimate the one-year prevalence as 7-20%, depending on criteria used to define IBS. Individuals with IBS demonstrate a high co-occurrence with common functional somatic syndromes and psychiatric disorders; however, the majority of these associations derive from non-population-based studies. We examined associations between IBS risk factors and Rome II-defined IBS in a U.S. population-based twin registry. Data from 4,591 male and female twins were available for this analysis. Variables representing self-reported presence of IBS, major depressive disorder (MDD), chronic widespread pain (CWP), fatiguing illness (CFS-like illness), Medical Outcomes Study short form (SF-12) scores and other personal characteristics were obtained through questionnaire. Odds ratios (OR) and 95% confidence intervals (CI) were calculated as measures of association between IBS risk factors and IBS. The prevalence of lifetime IBS was 4.7% (95% CI: 4.1, 5.4). Positive associations were observed between IBS and lifetime MDD (OR=2.0, 95% CI: 1.5, 2.7), lifetime CWP (OR=3.9, 95% CI: 2.7, 5.5), lifetime CFS-like illness (OR=4.7, 95% CI: 3.0, 7.3), and female sex (OR=2.0, 95% CI: 1.4, 2.8). Age, body size, and SF-12 scores demonstrated approximately null associations with IBS.

We further examined the overlap of individuals with IBS and MDD since both disorders suggest a familial tendency and demonstrate a higher than expected co-occurrence. Using the population-based Swedish Twin Registry, we examined the genetic and environmental architecture of the co-occurrence of IBS and MDD among 31,407 twins who contributed information on medical data and personal characteristics via phone interview. Both the case-control study and the co-twin control study design demonstrated an increased association between MDD and IBS (OR=2.7, 95% CI: 2.3, 3.2), and (OR=2.2, 95% CI, 1.5, 3.2), respectively. Thus, genetic and environmental factors did not confound the association between MDD and IBS; rather one of these disorders may predispose individuals to the other disorder. The positive associations observed between MDD and IBS suggest a possible hypothesis whereby one disorder is part of the causal disease mechanism of the other disorder, thereby leading to a high co-occurrence between MDD and IBS.