Introduction Small Bowel Bacterial Overgrowth (SBBO) has recently been proposed to be prevalent in patients with diarrhoea predominant Irritable Bowel Syndrome (IBS-D). However prevalence figures in studies have varied widely dependant on the diagnostic test used, with low prevalence rates of 4% using jejunal aspirate and culture, to between 38–84% using hydrogen breath tests.

This study used the Glucose Hydrogen and Methane Breath Test (GHBT) to determine if there was a relationship between patients with IBS-D symptoms and SBBO. Concurrently any clinical features or baseline laboratory investigations indicative of a high likelihood of SBBO was investigated.

Methods A retrospective analysis of patient hospital records for patients referred to a tertiary GI Physiology Department at Sheffield Teaching Hospitals (STH) between January 1988–2013 for a routine GHBT was conducted. Data was split into two groups. Group 1 included all patients demographics referred for a GHBT (1998–2010) to investigate characteristics predictive of SBBO. Group 2 included patients who fulfilled ROME III criteria for IBS-D who underwent a GHBT (2010–2012). A positive result for SBBO was defined as a rise in hydrogen or methane levels of ≥10 ppm over baseline levels.

Results In group 1 786 patients were identified (276 male, mean age 54). Overall 175/786 (22.3%) tests were positive. Laboratory investigations and patient characteristics predictive of a positive result were low vitamin B12 (p < 0.001), low albumin <30g/dL (p < 0.001), concurrent use of a proton pump inhibitor (PPI) (p = 0.002), previous Bilroth II gastroenterostomy (p < 0.001), previous vagotomy (p < 0.001), right hemi-colectomy (p = 0.003), coeliac disease (p < 0.001), and small bowel Crohn’s disease (p = 0.04) and age over 65 years (p < 0.001). Symptoms predictive of a positive GHBT included diarrhea (p = 0.03) and weight loss (p < 0.01).

In group 2 135/834 patients fulfilled ROME III criteria for IBS-D (42 male, mean age 43 years). Overall 26/135 (19.3%) tests were positive. A significant correlation was found between patients with IBS-D symptoms and SBBO (p = 0.01). Characteristics predictive of SBBO in IBS-D patients were previous small bowel surgery (p = 0.04) and blind loop syndrome (p = 0.04).

Conclusion This study has further highlighted the proposed relationship of IBS-D symptoms and an increased prevalence of SBBO. In IBS-D patients factors predictive of SBBO were previous small bowel surgery and blind loop syndrome. For the sub-cohort of patients attending for a GHBT factors predictive of SBBO were patient age (≥65 years), diarrhea, weight loss, use of a PPI, previous Bilroth II gastroenterostomy, previous vagotomy, right hemicolectomy, coeliac disease, small bowel Crohn’s disease, low Vitamin B12 and low albumin.

Disclosure of Interest None Declared.