FUNCTIONAL GASTROINTESTINAL DISORDER COMORBIDITIES: Comparisons of Prevalence and Costs in the 6 Months Before and After Diagnoses of Constipation (C) and Irritable Bowel Syndrome (IBS-C)

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Introduction

• Patients with constipation (C) and irritable bowel syndrome (IBS) can present with a wide range of gastrointestinal conditions.
• Prior research has documented the association of both C and IBS with co-existing gastrointestinal medical conditions (comorbidities) as well as other functional gastrointestinal disorders (FGIDs), including functional dyspepsia, gastroesophageal reflux disease (GERD), non-motility gastrointestinal disorders, and somatic conditions.
• How often these FGID comorbidities occur and their temporal relationship to C and IBS is not extensively researched.
• This study addresses the occurrence of comorbid FGID conditions both before and after diagnoses of C and IBS, and the role of specific FGID comorbidities in the overall cost of care.

AIM

• To evaluate the prevalence and cost of FGID comorbidities in a large sample of patients in the 6 months before and after diagnoses of C and IBS in a California Medicaid (Medi-cal) cohort (N=55,620) and to compare with controls (patients without C and IBS; N=1,545).

Methods

• A retrospective analysis was performed on healthcare claims data (1/1/2001 to 6/30/2006) extracted from the Human Capital Management Services (HCMS) Reference Database consisting of approximately 510,000 employees representative of the US Employed Civilian Labor Force (2004).
• The prevalence and costs of FGID comorbidities were compared both before and after diagnoses of C and IBS.
• The prevalence of FGID comorbidities (ICD9: 560.3x) were compared both within and between cohorts (C vs. IBS-C).
• The costs of specific FGID conditions were compared both before and after diagnosis of C and IBS.

Results

• Data were available for 309 IBS-C persons, 1,545 matched C persons and 55,620 matched controls, for which there were no statistically significant differences in characteristics (Table 1).
• The prevalence of all comorbidities (intestinal impaction, anal fissure, hemorrhoids, and ulcer of the anus and rectum) was numerically increased for all comorbidities after diagnosis of C and IBS-C (Table 2).
• The costs of hemorrhoids increased significantly after diagnoses of C and IBS-C (Table 3).

Summary and Conclusions

• The prevalence of certain GI comorbidities was similar in both the C and IBS-C cohorts before and after diagnosis.
• The prevalence of FGID comorbidities significantly increased after diagnoses of C and IBS-C.
• The costs of certain GI comorbidities were similar between the C and IBS-C cohorts both before and after diagnosis.
• Costs of hemorrhoids increased significantly after diagnoses of C and IBS-C.
• There was an increased, though non-significant, trend in the prevalence of other GI comorbidities after diagnoses of C and IBS-C.
• There were no statistically significant differences in FGID comorbidities and costs from the controls.

References

ABSTRACT

Background: Patients with C and IBS can present with a wide range of functional gastrointestinal disorder (FGID) comorbidities. However, it is unknown how often these comorbidities occur or their temporal relationship to C and IBS. Few studies have differentiated the occurrence of FGID comorbidities before and after diagnoses of C and IBS.

Objective: To evaluate the prevalence and costs of FGID comorbidities in a large sample of patients in the 6 months before and after diagnoses (DXs) of C and IBS-C (co-occurring DXs of IBS and C).

Methods: A retrospective analysis was performed in an employer database of greater than 500,000 employees. Patient cohorts with C (ICD9s 564.0, 564.00, 564.01, and 564.09), IBS-C (ICD9 564.1x and co-occurring C) and a Control group (neither C nor IBS-C) were identified. For each IBS-C patient identified, 5 C patients and 180 Control patients were matched using logistic regression and propensity scores for age, job tenure, gender, marital status, race, exempt-and full-time employment status, salary, region, Charlson Comorbidity Index Score, and the existence of medical claims. Prevalence and costs for FGID co-morbidities were calculated for the 6 months before and after C and IBS-C DXs by FGID ICD9 code (see table). Comorbidity comparisons were performed within (before vs after) and between (C vs IBS-C vs control) groups. Prevalence comparisons used z-scores of log odds ratios (Woolf method) and costs were compared by Sattherthwaite t-tests.

Results: Data were available for 309 IBS-C patients, 1545 C patients, and 55,620 matched Controls. All cohorts averaged 41 years of age and 74% were female. The prevalence and costs of FGID comorbidities within and between C, IBS-C, and Control groups generally increased. Many findings were significant (see table).

Conclusion: The prevalence and costs of FGID comorbidities increase after diagnoses of C and IBS+C. Prevalence and costs of comorbidities were similar between C and IBS+C cohorts.

<table>
<thead>
<tr>
<th>Diagnosis (ICD9)</th>
<th>Time (relative to DX)</th>
<th>Prevalence (% of cohort)</th>
<th>6-Month Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>IBS+C</td>
<td>C</td>
</tr>
<tr>
<td>Hemorrhoids</td>
<td>Before</td>
<td>4.14†</td>
<td>8.09†</td>
</tr>
<tr>
<td>(555.xx)</td>
<td>After</td>
<td>12.49†</td>
<td>17.80†</td>
</tr>
<tr>
<td>Intestinal Obstruction</td>
<td>Before</td>
<td>0.78†</td>
<td>2.59†</td>
</tr>
<tr>
<td>(560.xx)</td>
<td>After</td>
<td>1.49†</td>
<td>2.91†</td>
</tr>
<tr>
<td>Anal Fissure</td>
<td>Before</td>
<td>0.52†</td>
<td>0.32</td>
</tr>
<tr>
<td>(565.0x)</td>
<td>After</td>
<td>1.17†</td>
<td>1.62†</td>
</tr>
<tr>
<td>Impaction of Intestine</td>
<td>Before</td>
<td>0.19†</td>
<td>0.65†</td>
</tr>
<tr>
<td>(560.3x)</td>
<td>After</td>
<td>0.26†</td>
<td>1.62†</td>
</tr>
<tr>
<td>Ulcer of Anus and Rectum</td>
<td>Before</td>
<td>0.00</td>
<td>0.65†</td>
</tr>
<tr>
<td>(569.41)</td>
<td>After</td>
<td>0.19†</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Between-group comparisons: † P < 0.01 (vs Control) * P < 0.05 (IBS-C vs C); Within-group comparisons (Pre- vs Post-DX): † P < 0.01; * P < 0.05

Notes

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Functional Gastrointestinal Disorder comorbidities: Comparisons of Prevalence and Costs in the 6 Months Before and After Diagnoses of Constipation (C) and Irritable Bowel Syndrome and Constipation (IBS+C), Am J Gastroenterol. Sep 2007; 102(suppl2):S510.