POST INFECTIOUS IRRITABLE BOWEL SYNDROME

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An important subgroup of patients with Irritable Bowel Syndrome describe a previously entirely normal bowel habit with all their symptoms developing immediately after an acute bout of diarrhea and vomiting. This phenomenon has been recognized by clinicians for many years and was well described by Truelove and Chaudary who studied 130 patients with Irritable Bowel Syndrome, 34 of whom were described as having postinfective IBS. Most of the infections were bacillary dysentery but some were amoebic. Interestingly, they found there was an important interaction between psychological problems and infection. They found that a post- infectious origin and absence of anxiety, depression or neurotic features both predicted a good outcome. The commonest causes of gastroenteritis are viral, followed by Campylobacter, Salmonella and Shigella. Viral gastroenteritis typically heals rapidly with little residual injury, while the bacterial infections often produce ulceration and bleeding. They are generally associated with more prolonged illness and it is these infections which have been associated with postinfective Irritable Bowel Syndrome. The first prospective study was reported by McKendrick(1) who studied 38 individuals following a salmonella outbreak. He found that 11 out of the 38 met the Rome I criteria for IBS 6 months after the initial illness. Two further prospective studies of hospitalized patients from an infectious disease unit in Sheffield also confirmed this high incidence of post- infective IBS(2,3). Our own study of 386 cases of bacterial gastroenteritis obtained from a community survey showed a lower incidence of post infective IBS (7%) possibly reflecting a less severe illness, since only 1 in 10 of these patients were hospitalized However these were not trivial illnesses since the average duration of illness was 7 days with a third reporting bloody diarrhea and a median weight loss of 6kg.

Interpreting this data requires knowledge of the normal incidence of new IBS, as was obtained in a large survey based on the British general practice database. This study of 584,308 patients found the incidence of new IBS per annum in non- infected patients to be 0.35%. However, in 300 patients who had a culture positive infectious gastroenteritis, the annual incidence was 4% giving a relative risk of 11.9% 95% CI (6.9-21)(4). Traveler's diarrhea is of course extremely common in Canadian citizens traveling to Mexico and Ilnyckyj prospectively surveyed this group. Nearly 50% developed travelers diarrhea and in this group the incidence of new IBS three months later was 17.5% compared with just 2.7% for those who did not get travelers diarrhea, a relative risk of 6.6(0.8-53)(5).

RISK FACTORS

Most patients with bacterial gastroenteritis recover fully and only a small minority develop post-infective Irritable Bowel Syndrome. Female sex, hypochondriasis and adverse life events in the previous year all give an increased risk(6,7) with a relative risk of 3.4, 2.0 and 2.0 respectively. A

much stronger risk factor is the duration of the initial illness, with a steadily increasing relative risk for each week of illness, reaching 11.4 for those with diarrhe a lasting more than 21 days. Bacterial factors are likely to be important since we found around 1 in 10 of Campylobacter infected individuals developed postinfective IBS compared with just 1 out of 100 with Salmonella. It is likely therefore that the severity of tissue damage and ulceration is a major predictor.

PATHOPHYSIOLOGY

Diarrheal illnesses are characterized by accelerated GI transit and increased gut sensitivity. This gradually returns to normal but at a variable rate. By three months most of those who are going to recover will have done so and thereafter the rate of recovery is much slower. As Gwee found colonic transit is accelerated in all infected individuals at 3 months, but those who meet the Rome I criteria for IBS have a faster transit than those who do not. Similarly rectal sensitivity is increased in those meeting Rome criteria, though again all those infected show a similar trend. Although conventional histological examination of mucosal biopsies in IBS shows no abnormality, when detailed quantification is undertaken changes are noted. We performed serial rectal biopsies in individuals recovering from Campylobacter gastroenteritis at 2, 6, 12 and 52 weeks. We note initial increases in both inflammatory cells and enteroendocrine cells, which mostly returned towards normal, but remained abnormal in a few markedly symptomatic individuals(8). Similar abnormalities were noted in patients attending the outpatients with a history of post- infectious Irritable Bowel Syndrome. There is a good correlation between the inflammatory cells and the enteroendocrine cells suggesting that cytokines might drive the enteroendocrine cell hyperplasia. The main content of the enteroendocrine cells is 5HT, an agent that stimulates peristalsis and intestinal secretion causing diarrhea in normal subjects. Drugs, which inhibit the action of 5HT such as Alosetron, are likely to show benefit in this group thought they have not been specifically studied. Other authors have noted increased enteroendocrine cells in unselected irritable bowel atients(9) but this needs confirmation. More important than increase in numbers may be the increase in release of 5HT. Several pilot studies(10) including some reported at DDW this year suggested that there was an exaggerated release of 5HT following a meal particularly in those who got meal related symptoms(11).

MANAGEMENT

It is important that patients should understand the important roles of anxiety, stress, and diet and persisting low-grade inflammation in this condition. Providing the Rome criteria are met and general physical examination is normal then the probability of another diagnosis is low. However, infections can unmask other disease particularly celiac disease, inflammatory bowel disease such as Crohn's and tropical sprue together with hypolactasia. Such patients should therefore undergo a minimum set of screening tests including endomysial antibodies, hemoglobin, CRP, ESR, albumin and stool culture. In the absence of alarm features such as weight loss, fever, rectal bleeding and nocturnal diarrhea, only 5% of all these tests will be abnormal. Since microscopic colitis has also

been reported to develop acutely after an infectious illness it is important to do a colonic biopsy and, if suspicions are high, also a duodenal biopsy to exclude coeliac disease.

Lactose intolerance developing after a viral gastroenteritis is well recognized by pediatrician. This occurs because lactase, the enzyme responsible for digesting lactose, is expressed fully only in the mature enterocyte at the tip of the villus. Since viral gastroenteritis generally specifically damages the villi, lactose levels remain low for some months. A low lactose diet is therefore worth trying, particularly in those racial groups with an a priori greater risk of lactose intolerance such as Asians, Africans and Chinese. A low lactose diet is only relevant if the subjects take more than 240mls of milk. Even those with documented lactose intolerance can tolerate amounts smaller than this when spread throughout the day. Since psychological factors are so important, it is necessary to make some formal assessment of this. Where anxiety and depression levels are high they should be treated on their own merits since it is unlikely the patient will recover without addressing these issues.

There are no specific diets recommended for post infective IBS but reduction of poorly absorbed carbohydrates, particularly wheat, potatoes together with other items such as citrus fruits have been reported to be beneficial in patients with diarrhoea-predominant IBS and should be tried(12). Loperamide and codeine are well tried treatments for diarrhea predominant IBS regardless of origin and are likely to be effective though at the risk of some side-effects, including sedation and nausea in the case of codeine and abdominal pain in the case of Loperamide. Alosetron has also been reported to be effective in diarrhea predominate IBS but again has not been specially tried in post infective patients.

PROGNOSIS

Whatever treatments are offered, the clinician can afford to be reassuring since the prognosis is relatively good. Chaudary's original study found 77% had recovered within 2 years(13) while Harvey also found 82% of those with acute illness at onset had recovered by 5 years(14). In our own follow-up 5 to 6 years following the initial survey we found that 11 out of 17 post infective Irritable Bowel Syndrome patients had actually recovered though we also noted that a past history of psychiatric disorder predicted a poor outcome.

KEY POINTS

- Post infective Irritable Bowel Syndrome accounts for around 1 in 10 of all cases of IBS.
- Females with prolonged illnesses and previous adverse life events are more likely
- to develop post- infective IBS.
- Low- grade inflammatory changes may persist in some of these patients.
- Overall prognosis is good with 2 out of 3 recovering over a period of 3-5 years.

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