

## **An IBS Pathway to Improve Patient Experience and Reduce Endoscopy Demand**

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### **Abstract**

#### **Aims**

This study aims to evaluate the efficacy of an IBS management pathway, and to assess its impact on endoscopy services in a regional Irish hospital.

#### **Methods**

Patients recruited from Endoscopy Referrals over six months were medically assessed. Patients who fulfilled diagnostic criteria for IBS received dietician-led management. Treatment response was assessed using standardised questionnaires. Cancelled colonoscopies were recorded.

#### **Results**

Twenty-six patients met the criteria for IBS. Twenty-one patients (81%) received first-line dietary advice, and five patients (19%) proceeded directly to low FODMAP diet. Fourteen patients (14/21, 67%) demonstrated a positive response to first line advice and were discharged. Dietary intervention (either first-line advice and/or low FODMAP diet) resulted in a positive response in 73% (19/26) of patients. The pathway resulted in thirty cancelled colonoscopies.

#### **Conclusion**

The results suggest that an IBS Pathway can significantly reduce dependence on endoscopy resources whilst providing high-quality, patient-centred care.

### **Introduction**

Irritable Bowel Syndrome (IBS) is a common functional condition characterised by chronic abdominal pain and altered bowel habit<sup>1,2</sup>. Current estimates suggest the prevalence in the general population is between 10% and 20%<sup>3-5</sup>. While GPs manage many IBS cases, approximately 30% are referred on to specialists<sup>6</sup>. The Rome diagnostic criteria for IBS are clear<sup>7</sup>.

In patients who meet diagnostic criteria in the absence of alarm symptoms<sup>8,9</sup>, minimal diagnostic investigations are required to rule out structural pathology and to safely establish the diagnosis of IBS<sup>10,11</sup>. Endoscopic investigation is rarely warranted.

A multidisciplinary approach is recommended in the treatment of IBS<sup>8</sup>. Guidelines advocate use of psychological and dietary interventions<sup>8,12</sup>, with symptom-specific pharmacotherapy as an adjunct<sup>8</sup>. Evidence supports the efficacy of simple dietary advice<sup>8</sup>, and emerging evidence favours a tailored low FODMAP diet in select patients<sup>13-15</sup>. FODMAPs (Fermentable Oligo-, Di-, and Monosaccharides and Polyols) are highly fermentable, short chain carbohydrates with poor small intestinal absorption. They lead to an increased osmotic load in the gut and increased gas production causing luminal distension<sup>16</sup>. This is thought to contribute to IBS symptoms. The British Dietetics Association recommends a low FODMAP diet for patients with persistent symptoms after first line dietary advice, with planned re-introduction of high FODMAP foods after approximately 6 weeks<sup>17</sup>.

Currently, in the Irish system, access to dietetics is limited, and psychotherapy is not routinely available to Irish patients. Failure to address IBS symptoms with these recognised approaches means patients have longstanding symptoms and unmet clinical needs. It is likely that this contributes to over-investigation of patients and referral for unnecessary endoscopy. This study reviews the design and implementation of a pilot IBS Pathway in a regional Irish hospital. It reports on patient experience using patient reported outcome measures (PROMs) and details the reduction in number of patients awaiting outpatient colonoscopy as a direct result of the pathway.

## Methods

Patients for the IBS Pathway were selected from Direct Access GP Referrals to a Regional Endoscopy Unit between May and November 2019. Consecutive referrals were reviewed by a Specialist Registrar (SpR) or Consultant Gastroenterologist, and all patients who met inclusion criteria were invited to partake in the study. Inclusion criteria included: Age <40 years, longstanding history of gastrointestinal symptoms, and individuals with a suspected diagnosis of IBS. Patients excluded from the study included individuals <18 years or >40 years, pregnant women, and patients with new onset gastrointestinal symptoms, significant PR bleeding, weight loss, nocturnal symptoms or pre-existing family history concerning for alternative diagnosis. Patients living in institutions or sheltered accommodation were also excluded from the study due to concerns regarding their ability to modify or restrict their diet if dietary intervention was deemed appropriate.

A letter was sent to patients informing them they had been selected for clinical review prior to proceeding with colonoscopy. Included in the correspondence was a laboratory form, stool sample container with advice on correct use, and an instruction sheet advising patients to book a phlebotomy appointment and provide a stool specimen within the next four weeks. Patients were advised that if they failed to reply or provide blood and stool samples within the allocated time period, they would not be offered a clinical appointment and their name would be removed from the endoscopy waiting list.

Each patient had a full blood count, urea and electrolytes, liver function tests, bone profile, thyroid function tests, Vitamin B12, Ferritin, Folate, CRP and Tissue Transglutaminase Antibodies performed. This is a wider array of blood tests than is routinely recommended for evaluation of IBS symptoms<sup>3</sup>. It was intended to allow for a full medical assessment and discharge within a single consultation. Faecal calprotectin levels were measured for each patient. Patients with iron deficiency anaemia, calprotectin levels >50mcg/g, or results suggesting an alternative diagnosis were automatically excluded from the IBS Pathway and directed to Gastroenterology OPD for early review.

Eligible patients were scheduled to attend for medical and dietetic reviews on the same day. Each patient was reviewed by a Gastroenterology SpR who conducted a standard medical history, clinical examination, review of test results and explanation of diagnosis.

If a diagnosis of IBS was established, the patient was offered symptom-directed pharmacotherapy as necessary and referred to the dietician-led IBS Pathway. No additional routine medical reviews were scheduled but patients were reassured that the dietician could re-refer for medical review if clinically indicated.

Patients who did not fit diagnostic criteria for IBS following medical review were to be directed to Gastroenterology Outpatient Clinic or Endoscopy as appropriate. A standard letter was sent to each patient's GP at the medical review with an update on planned management.

Each patient completed the IBS Quality of Life Questionnaire <sup>18</sup>, the IBS Symptom Severity Score <sup>19</sup>, and IBS-Adequate Relief Question <sup>20</sup>. These Patient-Reported Outcome Measures (PROMs) were used to monitor patient progress on the Pathway. At the initial one-hour dietician appointment, diet, lifestyle and symptoms were assessed. Basic dietary advice was provided. Four weeks later, patients were contacted by telephone, and a review of symptoms was conducted using the PROMs. Individuals who had a suboptimal response to first-line advice were directed to receive tailored low FODMAP dietary advice.

Patients for low FODMAP advice received a one-hour dietician appointment to explain the concept of FODMAP Restriction. Six weeks later patients received a follow-up clinical appointment for advice regarding FODMAP reintroduction and re-assessment of symptoms. Finally, ten weeks after re-introduction of specific high FODMAPs, patients were contacted by telephone to assess response. At this point the dietician assessed if the patient was suitable for discharge, warranted a final dietician review appointment to ensure diet was nutritionally adequate, or required further medical assessment.

PROMs were recorded before and after completion of the IBS Pathway, and numbers of endoscopic or medical interventions warranted during the IBS Pathway were recorded.

## Results

First assessment clinics took place between July and December 2019. Thirty-one patients were invited to attend. Five patients did not engage and were consequently removed from endoscopy waiting lists. Twenty-six patients were reviewed for suitability for the IBS pathway. The patients ranged in age from twenty-one to forty years and the median age was thirty. There were six males (23%) and twenty females (77%). Of note, eight patients (8/26, 31%) had a pre-existing diagnosis of depression or anxiety. They were receiving either pharmacological treatment or GP-led support for their mental illness. All twenty-six patients who attended for initial medical review were eligible for the IBS Pathway. Eight patients (8/26, 31%) had diarrhoea-predominant IBS, eleven patients (11/26, 42%) had mixed-type IBS, and seven patients (7/26, 27%) had constipation-predominant IBS.

Once referred to the IBS Pathway, twenty-one patients (21/26, 81%) received first-line dietary advice, and five patients (5/26, 19%) proceeded directly to low FODMAP diet. A reduction of fifty points on the IBS Symptom Score was used to indicate treatment response. Fourteen (14/21, 67%) patients who received first-line advice were successfully treated and discharged from the pathway. Two patients (2/21, 10%) did not follow up after first-line advice. It is possible these patients had a positive response to treatment as they agreed to inform dieticians regarding treatment failure. Five patients (5/21, 24%) were referred for low FODMAP advice after first-line treatment.

## FODMAP Cohort

In total, ten patients (10/26, 38%) on the IBS Pathway were referred for low FODMAP advice. One patient was lost to follow-up at this point. One patient declined to make changes to her diet during the Coronavirus pandemic due to concerns that it might increase susceptibility to the virus. One patient was hospitalised with an unrelated illness and follow-up was deferred. Both of these patients have been offered review when clinically appropriate. Only two patients had an inadequate response to treatment and were referred to Gastroenterology OPD. The remaining five patients indicated a positive response to treatment.

**Table 1:** Summary of Outcomes

73% (19/26) had a positive response to dietary intervention
11 % (3/26) were lost to follow-up
8% (2/26) had inadequate response to all dietary intervention
8% (2/26) had unknown response to dietary intervention and are awaiting follow-up

### *Additional Investigations Required*

One patient who entered the IBS pathway was referred for colonoscopy due to the emergence of nocturnal bowel motions. The investigation was normal, and symptoms subsequently settled. In a small number of cases (n=4), the Gastroenterology SpR requested additional, history-specific, non-invasive investigations at the initial assessment. This did not interfere with progression onto the IBS Pathway. For example, three patients who reported significant upper GI symptoms were tested non-invasively for H. Pylori, and an elevated ferritin was further evaluated. Additional test results were followed appropriately and did not interfere with patient flow on the pathway.

Over the course of the study, an average reduction of 160 on the IBS Symptom Score was observed in the Diarrhoea-Predominant Group, with an average reduction of 122 and 128 in the Mixed-Type and Constipation-Predominant Groups respectively. In total, the pathway resulted in direct removal of thirty patients from Colonoscopy waiting lists over a 6-month period.

## **Discussion**

Although this is a small study, the results are encouraging. Patients were recruited in real-time from Direct Access GP Endoscopy Referrals. Additional eligible patients could be readily accessed by applying inclusion criteria to patients on existing endoscopy waiting lists.

The positive outcomes in this study echo the literature on integrated care for IBS patients <sup>21</sup>. The authors believe the improvements in PROMs in this study reflect improvements in diet and lifestyle but may also relate to the positive psychological impact of receiving a clear diagnosis with appropriate management in a timely manner. It is recognised that a strong patient-provider relationship contributes to positive outcomes for IBS patients <sup>21</sup>, and the experience of having healthcare professionals listen with compassion to their experiences likely contributed to improved physical and psychological wellbeing in this patient cohort. The high burden of psychological distress in this study is reflective of the known association between IBS and psychological conditions <sup>6,22,23</sup>, and emphasises the need to offer comprehensive management strategies in supporting IBS patients.

Given the current dramatic increase in mental illness in Ireland<sup>24</sup>, and our understanding of IBS as a functional disorder with exacerbation of symptoms at times of stress and poor mental health, it is likely that IBS will increase demand on Gastroenterology Services into the future.

From a service planning perspective, this study indicates that strategies can be introduced in Irish hospitals using pre-existing resources to reduce waiting times for endoscopy services and outpatient clinics, while achieving an overall outcome of higher quality, patient-centred care.

No extra funding was required to establish this Pilot IBS Pathway. An SpR who was already in post ran the medical clinic on a fortnightly basis. Two dieticians were re-directed from ward-based duties to facilitate dietetics review. Expansion of the Pathway to cater for larger numbers of patients would require additional dietetic support, but it is estimated that the associated cost would be significantly offset by savings achieved through reduction in attendance for medical clinics and endoscopic procedures. In the aftermath of the COVID-19 pandemic, innovative approaches will be required to encourage cost-saving in the HSE, and to reduce in-hospital patient visits and procedures, so that social distancing can be maintained and unnecessary risk to patients avoided. This Pathway lends itself to remote consultations and could be adjusted to meet the needs of the HSE in the post-pandemic era.

#### **Declaration of Conflicts of Interest:**

The authors have no conflicts of interest to declare.

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