



Alimentary Tract

# Bran and irritable bowel syndrome: The primary-care perspective

V. Miller, R. Lea, A. Agrawal\*, P.J. Whorwell

*South Manchester University Hospitals, Manchester, UK*

Received 20 December 2005; accepted 19 June 2006

Available online 1 August 2006

## Abstract

**Background.** We have shown that bran exacerbates irritable bowel syndrome symptoms in a large proportion of secondary-care patients. However, it is unknown if this also happens in primary-care or whether a better response to bran occurs, leading to bran failures being selected for referral to the specialist.

**Aims.** To assess the response to bran in primary-care irritable bowel syndrome comparing it to that obtained in secondary-care.

**Patients and methods.** One hundred consecutive primary-care irritable bowel syndrome patients were asked how bran or soluble fibre products affected their symptoms.

**Results.** Bran improved symptoms in 27% of primary-care and 10% of secondary-care patients ( $p < 0.01$ ) and exacerbated symptoms in 22% of primary-care and 55% of secondary-care patients ( $p < 0.001$ ). Fifty-one percent of primary-care and 33% of secondary-care patients reported no change with bran. In primary-care, proprietary fibre led to improvement in 25%, deterioration in 19% and no change in 56% which was not significantly different to secondary-care.

**Conclusion.** Although not especially effective in primary-care irritable bowel syndrome patients, bran does not cause so many problems and is more helpful than in secondary-care. The effects of soluble fibre are similar in both primary-care and secondary-care. This study highlights the problem of extrapolating the response to treatment in irritable bowel syndrome from different care settings.

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**Keywords:** Bran; Fibre; Irritable bowel syndrome; Primary-care

## 1. Introduction

Irritable bowel syndrome (IBS) is characterised by the presence of abdominal pain or discomfort associated with an alteration in bowel habit, usually together with bloating. Despite sometimes being regarded as a trivial condition, IBS is in fact a major and under recognised health problem. Recent studies have revealed that in severely affected patients quality of life is comparable with that of life threatening conditions such as end stage renal failure and diabetes mellitus [1]. In the US each year approximately 3.5 million physician visits are made because of IBS [2], resulting in the administration of prescription medication in 75% of these visits and follow-up being arranged in a similar proportion [3]. There-

fore, it is perhaps not surprising that the cost of treating IBS is large, having been estimated at 8 billion US dollars each year [4].

Gastroenterologists spend up to 50% of their clinic time dealing with IBS patients and make the diagnosis more frequently than any other single condition [5,6]. Nevertheless these specialists only see about one quarter of patients with IBS with the majority being managed in primary-care [7]. Furthermore tertiary centres only see in the region of 10–15% of IBS patients [8], although paradoxically much of the data relating to IBS is obtained from this subgroup. Whether this information can be accurately extrapolated to the wider IBS population, particularly in primary-care, is doubtful.

Standard treatment for IBS in primary-care involves giving dietary advice and offering the use of simple medications such as antispasmodics [9], although the evidence of benefit using these approaches is limited, with some investigators

\* Corresponding author. Tel.: +44 161 291 5813; fax: +44 161 291 4184.

E-mail address: [anurag.agrawal@postgrad.manchester.ac.uk](mailto:anurag.agrawal@postgrad.manchester.ac.uk)  
(A. Agrawal).

even suggesting that there is little evidence to support the use of many current therapies [10].

Ever since Burkitt et al. [11] first suggested that fibre might protect people in un-industrialised areas from certain gastrointestinal disorders, the practice of advising fibre supplementation in IBS has become widespread. However, it has been our clinical impression that bran actually exacerbates IBS in patients in secondary-care, a view that was confirmed in a study we published in 1994 [12]. Nevertheless a recent survey found that most general practitioners believe that fibre deficiency is the main cause of IBS symptoms and 94% would institute dietary therapy based on this assumption [13]. If patients in primary-care benefit from bran they would be unlikely to reach secondary-care, with only those failing to respond or being exacerbated by such an approach being referred. The aim of the current study was to assess the effect of fibre on IBS symptomatology in the primary-care setting, comparing it with that previously obtained in secondary-care.

## 2. Materials and methods

### 2.1. Study subjects

Patients attending seven local general practices representative of an urban but not inner city population were approached and asked if they would participate in the study. Patients fulfilling Rome 1 criteria for IBS were recruited in order to make them comparable to the secondary-care population. Subjects without concomitant disease were recruited consecutively until 100 had completed questionnaires. Exactly the same questions about the effect of bran and commercial fibre on IBS symptomatology were used as in our previous study in the form of a self-report questionnaire. Any patient who had been referred for hospital assessment was excluded. All patients gave informed consent and the study had been granted approval from the South Manchester Local Research Ethics Committee.

### 2.2. Symptom assessment

Patients were asked the following questions:

1. What effect do you think wheat fibre containing foods (e.g. Weetabix, brown bread, bran, cereals, etc.) have on your IBS? Makes it better/no effect/makes it worse;
2. What effect do commercial fibre products (e.g. fybogel, regulan, isogel, etc.) have on your IBS? Makes it better/no effect/makes it worse.

### 2.3. Statistical analysis

The results from primary- and secondary-care were compared statistically using chi-square tests. Pearson's two-tailed correlations were used to determine the relationships between

the response to bran or commercial fibre and bowel habit subtype or other characteristics.

## 3. Results

One hundred primary-care IBS patients, 87 female aged 20–67 (mean 43.0) years and 13 male aged 32–59 (44.1) years were studied. Twenty-one patients were classified as having diarrhoea predominant IBS, 24 as constipation predominant and 55 as having an alternating bowel pattern. The secondary-care group consisted of 82 females aged 20–77 (mean 40.5) and 18 males aged 23–73 (mean 43.7). Twenty-nine were classified as diarrhoea predominant, 26 as constipation predominant and 45 as having an alternating bowel pattern. Overall there were no demographic differences between the two groups.

All patients in the primary-care group had been advised, at some time during the course of their illness, to consume more fibre in the form of bran. Twenty-seven percent of these patients said that bran had improved their symptoms compared with 22% who claimed it had made them worse. The majority, 51%, reported that bran had no positive or negative effect on their symptoms. When bran resulted in a deterioration in symptoms this could affect bowel habit, pain or bloating.

Forty-eight primary-care patients had previously tried one or more commercial fibre products. Twenty-seven of these patients (56%) reported no change in symptoms, whilst 12 (25%) reported an improvement and 9 (19%) deterioration in symptoms.

In the primary-care group there was no relationship between bowel habit subtype and the effect of wheat fibre on the patients symptoms and no particular patient profile that predicted a response to bran. With respect to commercial fibre, patients with an alternating pattern were significantly more likely to report neither an improvement or deterioration with such preparations ( $p = 0.02$ ).

Fig. 1 compares the symptomatic effect of bran in the current primary-care sample with the results obtained from our previous study in secondary-care. As can be seen, secondary-

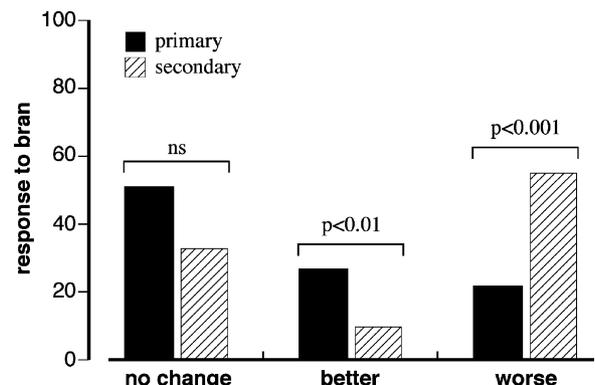


Fig. 1. Symptomatic response to bran in primary- and secondary-care.

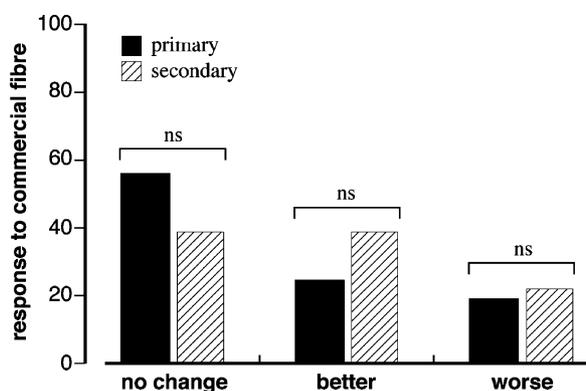


Fig. 2. Symptomatic response to commercial fibre in primary- and secondary-care.

care patients were far more likely to deteriorate with bran ( $p < 0.001$ ) and primary-care patients were significantly more likely to improve with this approach ( $p < 0.01$ ).

Fig. 2 compares the effect of commercial fibre preparations. The relative proportions of patients reporting no change, improvement or deterioration were not significantly different between primary- and secondary-care patients ( $p = 0.15$ ).

#### 4. Discussion

We have previously shown that fibre, particularly in the form of bran, appears to exacerbate the symptoms of patients attending secondary-care with IBS [12]. This finding has been supported by a recent systematic review of 17 studies of fibre supplementation in IBS [14] which concluded that although it may sometimes help constipation, there is little evidence that it is especially beneficial in relieving any of the other symptoms associated with the condition. Pain [13], bloating [12,15] and gas related symptoms are all potentially exacerbated by this approach. One of the major problems with all these studies is that none has been undertaken in primary-care where the majority of patients are seen and where the response to bran may be different.

It is entirely possible that primary-care IBS patients could be more likely to respond positively to bran with only the non-responders or those made worse being referred onto secondary-care. The results of the current study, which is the first to be undertaken in primary-care, tend to support this view with bran appearing to cause far less problems than it does in secondary-care. However, a favourable response was only observed in 27% which is still quite disappointing considering the potential for IBS to have a placebo response around 40–50% [16].

A consistent finding in this and our previous study was that soluble fibre such as that derived from ispaghula, causes less problems and is more likely to be helpful than the insoluble varieties. This observation was also noted in Bijkerk's systematic review and these results suggest that the two types of

fibre might be working in different ways although the mechanisms involved are unknown. It would be of interest to assess the effect of fibre from different sources on visceral sensation, which is so often deranged in IBS [17] as this could be one way in which any negative effect could be mediated.

One potential limitation of this study that needs to be noted is the fact that the primary-care patients were compared with a cohort of secondary-care patients collected at a different time. However, there is no evidence to suggest that the dietary advice given to IBS patients has changed substantially over time and this was confirmed by the observation that 100% of patients in each group had been advised to take bran for their problem. It should also be emphasised that this study was designed as a survey rather a clinical trial although the results suggest that a controlled trial comparing the effects of soluble and insoluble fibre in primary-care patients is warranted.

In conclusion, the practice of routinely advising bran for patients with IBS is less likely to cause problems in primary-care than in secondary-care patients. However, this approach is not especially beneficial even in the primary-care setting and until further controlled data is forthcoming, commercial fibre preparations such as those derived from ispaghula might be generally more preferable.

#### Conflict of interest statement

None declared.

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