

A Literature Review of Defecation Care to Prevent Faecal Incontinence in Elderly Individuals with Irritable Bowel Syndrome

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1. Abstract

Irritable bowel syndrome (IBS) is a functional gastrointestinal tract disease characterized by abnormal defecation and abdominal pain. The Rome IV criteria define faecal incontinence as "recurrent and uncontrolled stool leakage that lasts more than 3 months." Faecal incontinence is common in patients with IBS and can have a significant negative impact on daily life and quality of life. Diet and lifestyle guidance are needed to prevent faecal incontinence. Faecal incontinence can be reduced by ingesting dietary fibre, which can improve stool properties, and avoiding foods with stool-softening properties. Additionally, defecation habit guidance is important for preventing faecal incontinence. If rectal sensation is normal, it is recommended for patients to go to the bathroom as soon as there is a desire to defecate. In elderly people, if there is stool in the rectum due to decreased rectal sensation and it continues to accumulate in the rectum without triggering the urge to defecate, overflowing leaky faecal incontinence may occur. For such patients, defecation habit training teaching them to defecate even if they do not have the desire to defecate may be effective. Education and advice on defecation reduces faecal incontinence and is beneficial to caregivers.

2. Introduction

Functional gastrointestinal disorders (FGIDs) are diseases in which

gastrointestinal symptoms persist chronically or recurrently, laboratory tests show no organic lesions, and symptoms occur due to dysfunction¹. Types of FGIDs include irritable bowel syndrome (IBS), functional abdominal distension, functional constipation, functional diarrhoea, and unspecified functional bowel disease [1-3]. Symptoms of IBS, a typical functional gastrointestinal disorder, include abdominal pain, abdominal discomfort, and associated bowel abnormalities [3]. The Rome IV diagnostic criteria are used to diagnose IBS. According to the Rome IV diagnostic criteria, IBS can be diagnosed if "abdominal pain occurs at least one day per week in the last three months, and the abdominal pain is associated with bowel movements and associated with changes in bowel movement frequency"[3]. IBS patients are defined as "those with two or more symptoms of three bowel abnormalities related to changes in stool shape (appearance)". The Rome IV diagnostic criteria define faecal incontinence as "recurrent and uncontrolled stool leakage that lasts more than 3 months." Faecal incontinence can often occur in patients with IBS, and faecal incontinence can have a significant negative impact on daily life and reduce the patient's quality of life.

3. Method

This is a literature review of the faecal incontinence with irritable bowel syndrome that highlights some of the main findings in the area

and discusses potential areas for further research. A search was conducted in PubMed, using the keywords "faecal incontinence" and "irritable bowel syndrome." The search was limited to studies published in only English without specifying limits on dates, study design, or the age of the participants.

4. Results & Discussion

4.1. Defecation Disorders Due to IBS

The Rome IV diagnostic criteria, which assess subjective symptoms, are used to diagnose IBS [1-4]. The Rome IV diagnostic criteria can distinguish between functional bowel disease with chronic symptoms and transient gastrointestinal symptoms. The criteria are as follows: "abdominal pain occurs at least one day per week in the last three months, and the abdominal pain is related to ① bowel movements, ② changes in bowel movement frequency, and ③ stool shape (appearance)." Functional bowel disease is defined as "change related, with two or more symptoms of three bowel movement abnormalities" that lasted more than 6 months before diagnosis and occurred more than 3 days in the last 3 months [3, 4]. IBS subtypes can be divided into IBS with diarrhoea (IBS-D), IBS with constipation (IBS-C), mixed IBS (IBS-M), and unclassifiable IBS (IBS-U). These subtypes are considered useful in clinical practice and treatment. Keep in mind that the Rome IV criteria assess only subjective symptoms, making it difficult to diagnose unconscious or cognitively impaired patients. In addition, IBS stool shapes vary from watery stools to hard stools, suggesting that the time it takes to pass through the gastrointestinal tract is reflected by the stool shape [5, 6]. On the other hand, it has also been reported that defecation frequency and transit time in IBS patients are often the same as those in healthy subjects [7, 8]. IBS causes intestinal motility disorders such as constipation and diarrhoea and abnormal bowel movements, although defecation symptoms differ depending on each subtype. Therefore, IBS is a clear high-risk factor for faecal incontinence [9-11].

4.2. Definition of Faecal Incontinence

IBS is often a high-risk factor for faecal incontinence [9-11]. The definition of stool disease varies slightly from country to country. The International Consultation on Incontinence (ICI) defines anal incontinence and faecal incontinence separately. Anal incontinence is defined as "the involuntary loss of flatus, liquid or solid stool that is a social or hygienic problem." Faecal incontinence is defined as "the involuntary loss of liquid or solid stool that is a social or hygienic problem"; therefore, faecal incontinence is defined as anal incontinence minus flatus incontinence [12, 13].

On the other hand, the American Society of Colon and Rectal Surgeons (ASCRS) defines anal incontinence as "the uncontrolled passage of faeces or gas over at least 1 month's duration, in an individual of at least 4 years of age, who had previously achieved control". Age and duration of illness are included in the definition without distinguishing between faecal incontinence and flatus incontinence [14-

16]. In addition, the American College of Gastroenterology (ACG) defines anal incontinence as "either the involuntary passage or the inability to control the discharge of faecal matter through the anus" [17], and the assessment includes variables such as social background, age, and duration of illness. Only flatus incontinence is excluded.

In this review, faecal incontinence is defined as "a symptom of stool leaking from the anus unconsciously or against one's will". Flatus incontinence is defined as "a symptom of gas leaking from the anus unconsciously or against one's will." Faecal incontinence and flatus incontinence are collectively defined as anal incontinence.

4.3. Classification and Assessment of Faecal Incontinence

Faecal incontinence can be divided into urgent faecal incontinence and leaky faecal incontinence or mixed faecal incontinence, which is a mixture of both [17] (Figure 1). Imminent faecal incontinence is a "symptom of feeling stool but not being able to reach a restroom in time." Leaky faecal incontinence is a "symptom of faecal incontinence that occurs without being noticed." Faecal incontinence is rarely caused by a single factor, and multiple factors are often interrelated [18]. Therefore, faecal incontinence does not necessarily mean that the anal sphincter is impaired. If faecal incontinence is caused by a disorder of the anal sphincter, a decrease in internal anal sphincter function reduces the anal canal resting pressure, resulting in leaky faecal incontinence. When the external anal sphincter is weakened, the voluntary contraction pressure of the anal canal is reduced, and urge incontinence is likely to occur [19]. On the other hand, even if the anal sphincter is normal, the rectal sensation may be reduced, and even if there is faeces in the rectum, the sensation of stool may not be felt. Then, faecal embolism may occur, resulting in overflowing faecal incontinence.

Irritable bowel incontinence may occur in IBS patients with increased rectal sensation and contractility, even if the anal sphincter is normal [20]. Diarrhoea causes irritable bowel incontinence, depending on the stool properties. In addition, decreased rectal sensation due to IBS-C with hard stools and functional constipation may cause leaky faecal incontinence. Since the status of defecation varies greatly from individual to individual, it is important to understand individual daily defecation habits and their changes, and the Bristol stool property scale is used to evaluate stool properties [21]. As factors in daily life related to the onset of faecal incontinence in IBS patients, it is necessary to assess not only the general condition, including body movement restriction, individual cognitive ability, and basic activity, but also the living environment, including the toilet environment [18, 22]. In addition, coexisting diseases other than IBS may be involved in the development of faecal incontinence. Taking therapeutics and laxatives for comorbidities often also causes faecal incontinence. Psychotic drugs may act on intestinal motility and peripheral nerves to cause faecal incontinence [23]. In addition, coffee and alcohol affect

intestinal motility and stool properties, and smoking history plays a role in the atrophy of the external anal sphincter muscle and causes urgent faecal incontinence [22]. In summary, faecal incontinence includes urgent faecal incontinence, leaky faecal incontinence, and mixed faecal incontinence, and it is important to understand the factors related to each. In particular, IBS is associated with different faecal properties depending on the subtype and may cause various types of faecal incontinence. Therefore, it is necessary to fully assess the daily lifestyle, defecation habits, and eating habits of IBS patients.

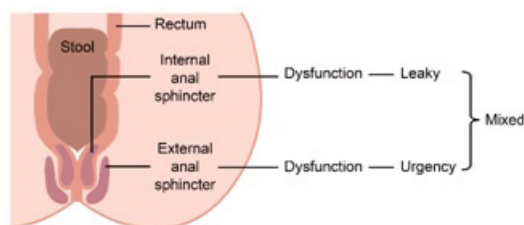


Figure 1: Leaky faecal incontinence and urgency faecal incontinence or mixed faecal incontinence.

The internal anal sphincter cannot consciously contract normally. If its function is impaired, stool leaks without being noticed, resulting in "leaky faecal incontinence". The external anal sphincter can normally contract consciously. If that function is impaired, I feel like having a bowel movement, but it leaks before I go to the bathroom. In other words, it becomes "imminent faecal incontinence".

4.4. Questionnaire for the Clinical Evaluation of IBS-related Faecal Incontinence

The diagnosis of IBS is based on the Rome IV diagnostic criteria [4] and other questionnaires. However, because of the many factors that contribute to the development of IBS, several questionnaires are used to assess the relationship between daily living conditions, quality of life (QOL), psychological status, and abdominal symptoms [23-26]. The evaluation of QOL using the SF-36 is clinically useful because it can be compared with QOL information from patients with other diseases. In addition, IBS-QOL, an IBS-specific QOL study, is effective in assessing the effectiveness of treatment [27]. The SCL-90-R, HDRS [28], EPQ, and DSSI [23] questionnaires are also available. Symptoms of IBS can be assessed by combining these questionnaires. In particular, questionnaires can reveal mental problems such as anxiety and depression. Several questionnaires are used for the clinical evaluation of faecal incontinence. The Rome IV diagnostic criteria define faecal incontinence as "recurrent and uncontrolled stool leakage that lasts more than 3 months." The use of questionnaires is useful because faecal incontinence can often occur in patients with IBS, and faecal incontinence can have a significant negative impact on daily life and reduce the patient's QOL [29]. The severity criteria for faecal incontinence include the Kirwan classification [30], Miller score [31], Pescatori score [32], Cleveland Clinic Florida Faecal Incontinence score (CCFIS) [33], St. Mark's score [34], the Faecal Incontinence Severity Index (FISI) [35], etc. In recent

years, the CCFIS has often been used for faecal incontinence symptoms and QOL evaluation. In addition, the St. Mark's score is often used when the sense of urgency is important. It is suggested that clinical evaluation using these questionnaires is useful for medical treatment of IBS with faecal incontinence.

4.5. Dietary Habits, Defecation Habits and Skill Care to Prevent Faecal Incontinence

As dietary and lifestyle guidance for patients with faecal incontinence, patients should be instructed to refrain from ingesting caffeine, citrus fruits, spicy foods, and alcohol, which have the effect of softening the stool [36]. Dietary fibre, such as psyllium, has been reported to reduce faecal incontinence by improving stool properties [37]. It has also been reported that ingestion of dietary fibre in addition to taking antidiarrhoeal agents such as loperamide hydrochloride improved faecal incontinence [38]. On the other hand, a study that guided changes in diet and fluid intake in elderly stroke patients with reduced physical fitness to regulate bowel movements showed that normal bowel movements increased, but faecal incontinence remained significant and did not improve [39].

Defecation habit guidance is an important factor in preventing faecal incontinence. If the rectal sensation is normal, it is recommended to go to the bathroom as soon as possible once there is a desire to defecate. On the other hand, if the rectal sensation is reduced, faecal incontinence can be significantly improved by systematically trying to defecate even if there is no desire to defecate [40, 41]. In elderly people, if there is stool in the rectum due to decreased rectal sensation and stool continues to accumulate in the rectum without triggering the urge to defecate, overflowing leaky faecal incontinence may occur. For such patients, defecation habit training may be effective in which twice a day (approximately 30 minutes after breakfast or dinner), the individual goes to the toilet to defecate even if there is no desire to defecate (stress defecation) [40, 41].

Educational guidance and advice on defecation from nurses reduces faecal incontinence and is also beneficial to caregivers [41]. In the context of poorly managed faecal incontinence, dermatitis such as erythema, erosion, and ulcers on the skin of the buttocks occurs. Moisturizing and protective skin care methods with mildly acidic cleansers and skin dressings reduce the incidence of faecal incontinence-related dermatitis [41].

In summary, dietary habits, defecation habits and skill care to prevent faecal incontinence are important and should be actively implemented.

4.6. Can Faecal Incontinence in Unconscious Patients be Predicted and Prevented in Advance?

The Rome IV diagnostic criteria and other questionnaires are used to assess the patient's subjective symptoms, so they are not able to diagnose unconscious or cognitively impaired patients. Therefore, we will consider whether objective indicators can be used to predict and

prevent faecal incontinence in unconscious patients in advance. In recent years, it has been reported that faecal retention can be objectively and noninvasively evaluated using ultrasound imaging equipment [42-45]. In addition, another previous study using ultrasound reported that gallbladder contraction was higher in the IBS group than in the control group, both in the fasted state and after dietary stress [46, 47]. Although IBS has been suggested to be associated with cholecystectomy, the number of cases is small, and its direct association with IBS symptoms is unknown. In addition, a previous study in Japan reported that abdominal ultrasonography assessed colon motility, and observation of the sigmoid colon on an empty stomach revealed enhanced colonic contraction in the IBS group. Postprandial observations of the sigmoid colon compared nine IBS cases diagnosed according to the Rome II criteria with four controls. Segmentation was enhanced in IBS-C patients. On the other hand, IBS-D was observed to enhance the transport of intestinal contents to the anus [48]. Based on these reports, ultrasonography can assess defecation disorders as a noninvasive examination and may help assess bowel motility abnormalities that cause IBS-related faecal incontinence. However, since there are few research reports, future verification is required.

Other studies have performed transvaginal ultrasonography and objective evaluation of IBS using transrectal ultrasound [49-52]. However, transvaginal ultrasonography is a difficult method for people who lead a general healthy social life [49, 50]. Since it is a painful examination method, it is difficult to use it in home medical care or medical facilities because it requires medical equipment.

Therefore, it is currently difficult to objectively evaluate IBS, and it is considered most important to fully evaluate the patient's chief complaint to prevent faecal incontinence related to IBS. Given this, predicting IBS-related faecal incontinence in advance using objective indicators should be considered in the future.

5. Conclusion

FGIDs are disorders in which gastrointestinal symptoms persist chronically or recurrently. In individuals with FGIDs, laboratory tests show no organic lesions, and symptoms are due to dysfunction. IBS is a typical FGID. Faecal incontinence can often occur in patients with IBS, and faecal incontinence can have a significant negative impact on daily life and reduce the patient's QOL. To prevent faecal incontinence, it is necessary to provide diet and lifestyle guidance. It has been reported that faecal incontinence can be reduced by ingesting dietary fibre, which can improve stool properties, and limit the ingestion of foods that have the effect of softening stool. There are also reports that faecal incontinence was improved by taking antidiarrhoeal agents. In addition, defecation habit guidance is an important factor in preventing faecal incontinence. If the rectal sensation is normal, it is recommended to go to the bathroom as soon as possible once there is a desire to defecate. On the other hand, if the rectal sensation is reduced, faecal incontinence can be signifi-

cantly improved by systematically trying to defecate even if there is no desire to defecate. In particular, in elderly people, if there is stool in the rectum due to decreased rectal sensation and stool continues to accumulate in the rectum without triggering the urge to defecate, overflowing leaky faecal incontinence may occur. For such patients, defecation habit training that teaches them to go to the toilet and defecate even if they do not have the desire to defecate may be effective. Educational guidance and advice on defecation from nurses reduces faecal incontinence and is also beneficial to caregivers. In the context of poorly managed faecal incontinence, dermatitis such as erythema, erosion, and ulcers on the skin of the buttocks occurs. Moisturizing and protective skin care methods with mildly acidic cleansers and skin dressings reduce the incidence of dermatitis associated with faecal incontinence. In conclusion, it is considered that dietary habits, defecation habits and skill care to prevent faecal incontinence are important and should be actively implemented.

In limitation, the Rome IV diagnostic criteria based on subjective symptoms are used to diagnose IBS. This approach is limited to those who can communicate and describe their symptoms. Ultrasound, on the other hand, can be a tool for diagnosing IBS with objective indicators. To date, several previous studies have reported that constipation and normal stools can be easily and noninvasively identified percutaneously. However, using ultrasound, it is difficult to evaluate abdominal pain, which is indispensable for diagnosing IBS. In the future, it is necessary to consider methods for further visualization of defecation disorders and indicators that can objectively evaluate abdominal symptoms such as abdominal pain.

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