

CODEN [USA]: IAJPBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.2545816

Available online at: <u>http://www.iajps.com</u>

Review Article

MANAGEMENT OF CHRONIC CONSTIPATION

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Abstract:

Introduction: Constipation is considered to be one of the commonly encountered clinical conditions around the world. The worldwide prevalence of idiopathic constipation has been approximated to be about fourteen percent. In North America alone, the overall prevalence of chronic constipation was estimated to reach eight percent, disproportionately affecting females more than males and older individuals more than younger individuals. This is likely to be caused by the higher rate of self-reporting of clinical manifestations and the higher rates of injuries to the pelvic floor muscles among females, along with the higher rates of the presence of other comorbidities and in the elderly and the fact that they use many medications. In addition, older individuals are generally more vulnerable to late complications that can potentially follow constipation. Constipation is generally more common in North American countries and European countries, when compared to other Asian countries, possibly because of the presence of cultural diversities, dietary variations, genetic predisposition, and environmental factors. Although constipation is commonly encountered condition, only a third of patients with chronic constipation get a consult from an expert regarding their manifestations. Most patients with constipation tend to manage their clinical manifestations sufficiently with nonpharmacological or lifestyle interventions. On the other hand, other patients with chronic constipation can have clinical manifestations which could be challenging to treat with these simple approaches, and these patients are generally vulnerable to suffer from significant health impairments and decreased quality of life along with psychological distress associated with their GI manifestations. Like other functional GI conditions, chronic constipation could significantly affect productivity and functionality of the patient and lead to declines in social activities of affected patients. In addition, chronic constipation is considered to be associated with high costs on healthcare resources. It is, in fact, approximated that the costs of testing for diagnosing constipation is about \$7 billion every year, with additional \$500 million to be spent on drugs and other therapies. In the following discussion, we will review the pathophysiology and common causes of constipation, the role of diagnostic tests, and the evidence regarding available medical options for this common condition. Aim of work: In this review, we will discuss Management of chronic constipation. Methodology: We did a systematic search for Management of chronic constipation using PubMed search engine (http://www.ncbi.nlm.nih.gov/) and Google Scholar search engine (https://scholar.google.com). All relevant studies were retrieved and discussed. We only included full articles. Conclusions: Chronic constipation is a common health problem that has great importance. Clinicians must have great understanding of the common underlying etiologies and pathophysiologies that cause chronic constipation and be able to distinguish between different types of constipation through proper history obtaining, complete physical examination, and the use of available testing modalities. Several therapeutic interventions are generally used for the medical management of constipation, and physicians should modify treatment plans according to the most likely etiology, patients' response, and the presence of concomitant symptoms. Some experts recommend a step-wise approach for the management of constipation, starting treatment with lifestyle modifications and bulking pharmacological agents, continuing to over-the-counter laxatives, and then to prescription agents in refractory cases. There are sometimes in everyday practice when the use of combination therapy might be needed to improve patients' manifestations and quality of life, but this has not been well-studied or published in the medical literature to provide solid guidelines. Newer agents that have shown promising results in clinical trials and practice are now available, and additional new drugs are in different stages of development.

Key words: Management, Chronic Constipation, Presentation

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ISSN 2349-7750

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Please cite this article in press Abdulmalek Rshood Alqwizani et al., **Management of Chronic Constipation.**, Indo Am. J. P. Sci, 2019; 06(01).

INTRODUCTION:

Constipation is considered to be one of the commonly encountered clinical conditions around the world. The worldwide prevalence of idiopathic constipation has been approximated to be about fourteen percent [1]. In North America alone, the overall prevalence of chronic constipation was estimated to reach eight percent, disproportionately affecting females more than males and older individuals more than younger individuals [2]. This is likely to be caused by the higher rate of self-reporting of clinical manifestations and the higher rates of injuries to the pelvic floor muscles among females, along with the higher rates of the presence of other comorbidities and in the elderly and the fact that they use many medications. In addition, older individuals are generally more vulnerable to late complications that can potentially follow constipation [3]. Constipation is generally more common in North American countries and European countries, when compared to other Asian countries, possibly because of the presence of cultural diversities, dietary variations, genetic predisposition, and environmental factors . Although constipation is commonly encountered condition, only a third of patients with chronic constipation get a consult from an expert regarding their manifestations [4]. Most patients with constipation tend to manage their clinical manifestations sufficiently with non-pharmacological or lifestyle interventions. On the other hand, other patients with chronic constipation can have clinical manifestations which could be challenging to treat with these simple approaches, and these patients are generally vulnerable to suffer from significant health impairments and decreased quality of life along with psychological distress associated with their GI manifestations.

Like other functional GI conditions, chronic constipation could significantly affect productivity and functionality of the patient and lead to declines in social activities of affected patients. In addition,

chronic constipation is considered to be associated with high costs on healthcare resources. It is, in fact, approximated that the costs of testing for diagnosing constipation is about \$7 billion every year, with additional \$500 million to be spent on drugs and other therapies. In the following discussion, we will review the pathophysiology and common causes of constipation, the role of diagnostic tests, and the evidence regarding available medical options for this common condition.

METHODOLOGY:

We did a systematic search for Management of chronic constipation using PubMed search engine (http://www.ncbi.nlm.nih.gov/) and Google Scholar search engine (https://scholar.google.com). All relevant studies were retrieved and discussed. We only included full articles.

The terms used in the search were: management, chronic constipation, presentation

DEFINITION AND CRITERIA

The general definition of abnormal bowel movement frequency is generally broad. Three movements of bowel per day or three movements of bowel per week can be generally considered normal. Although infrequent bowel movements may cause significant distress to individuals, it is the quality (or difficulty) of defecation that is the main determinant of constipation describe by the patient. clinical manifestations like straining, having a sense of incomplete defecation, having hard or lumpy stools, or defecation that requires manual methods to be completed are usually found in individuals who suffer from constipation. Constipation could be generally defined as the reduction of defecation frequency and the reduction of stool passage, with the presence of hard stool, or the feeling of incomplete defecation that causes dissatisfaction of individuals [5].

It is generally common for physicians and individuals to differently understand the concept of constipation and having a mutual lexicon regarding clinical manifestations of constipation is, therefore, an essential part of performing successful treatment of this widely prevalent clinical condition [6]. In attempts to standardize constipation's definition. clinical criteria of chronic constipation and irritable bowel syndrome were created by the ROME committee, as the ROME III criteria [7]. The first step during the management of an individual with constipation is to distinguish between chronic constipation and IBS, which can sometimes be defined as the presence of abdominal discomfort or pain that can temporally be associated with the presence of at least two of the following clinical manifestations: discomfort improvement following defecation, having hard stools, and/or having infrequent defecation.

Although individuals who have chronic constipation can possibly complain of some abdominal discomfort, it is not usually the main complaint like in cases of IBS. Despite the attempts to distinguish these conditions, the distinction between them could be challenging in many patients. In addition, the application of such criteria in everyday practice could be restrictive, because of the presence of disparities between definitions of constipation and patient's selfreported constipation [8].

CHRONIC CLASSIFICATION:

CONSTIPATION

Chronic constipation can be generally categorized according to its etiology, into primary constipation (which is also called chronic idiopathic constipation functional constipation) secondary or and constipation (which can be attributed to the presence of another comorbidity or due to a side effect of a drug). The distinction between those two types is crucial, as management plans aiming at decreasing the constipation-inducing effects of the underlying disease or the offending drug must generally be the initial step (if possible) when managing secondary constipation. Over nine hundred pharmacological agents have been found to be associated with constipation, including many prescription and overthe-counter agents along with herbal supplements.

PRIMARY CONSTIPATION:

Normal motility of the colon generally depends on the presence of normal colonic peristaltic contractions which are generated by the myenteric plexus interplay, Cajal interstitial cells, and numerous other neurotransmitters [9]. Functionally, CIC can be generally categorized as normal transit constipation (NTC), slow transit constipation (STC), and/or rectal evacuation disorders-associated constipation. The pathophysiologies which are associated with different constipation subtypes are not completely understood yet, with several mechanisms have been suggested as possible explanations. It is essential to fully understand that individuals who suffer from primary constipation might show clinical manifestations due to the presence of an overlap between several mechanisms. therefore, an individual with STC or NTC might also have some evidence of the presence of rectal evacuation diseases.

successful management of generally, rectal evacuation disease, is an essential component of the successful management of any form of primary constipation when any kind of overlap is detected. The fibrous content of diet is likely to have an important role in the process of constipation development, according to improvements in patients with self-described constipation and normal colonic transit and anorectal function following the use bulking agents. More recent research claims that specific subtypes of dietary fibers may positively affect colonic transit [10]. On the other hand, increasing dietary fibers has not been found to be linked with better clinical manifestations in individuals who suffer STC. In these individuals, the presence of this delayed colonic transit causes long time-dependent absorption of water, leading to the development of hard stools that are difficult to evacuate. In addition, the presence of abnormal colonic transit can also impact the colon microbial milieu that has been proven to have a significant impact on the motility of the colon itself, absorption within the colon, and colon secretions [11]. Finally, alterations in the motor functions and sensory functions of the pelvic, along with the presence of behavioral factors and psychological factors, mainly in children and young individuals, have been found to be linked with primary constipation. All these possible etiologies have been found to be linked with female sex, older age, and having a lower socioeconomic status.

NORMAL TRANSIT CONSTIPATION:

In NTC constipation, colonic neuroendocrinal and muscular functions are all normal. It is the commonest subtype of primary constipation found in everyday practice by physicians and could sometimes be called functional constipation. Despite the usual presence of abnormal frequency of stools and abnormal transit rate along the colon, individuals who have NTC usually endorse sensations of difficult or delayed defecation, hard stools, as well as feeling of bloating, and the presence of discomfort or abdominal pain [12]. These individuals might have higher rectal compliance, and/or reduced rectal sensation. These individuals usually respond to therapies that depend on increasing dietary fibers and/or using osmotic laxatives.

SLOW TRANSIT CONSTIPATION:

Slow transit constipation could virtually attack all age groups, but it is most frequently found among younger females who start to develop clinical manifestations since puberty. These individuals might have dysfunctional propulsive motor activity of the colon, a decreased gastrocolic reflex, and delayed proximal colon emptying. There is usually decreased response to interventions with dietary fibers modifications and bulk laxatives use. The main feature of STC is the presence of dramatically infrequent defecation and the absence of an urgency defecate. It is usually common for these individuals to report one or less bowel movements per week.

The specific etiology of STC is not clearly understood. Immunohistochemical studies have shown a significant decline in interstitial cells of Cajal's density, absence of myenteric plexus neurons (which normally express the excitatory transmitter substance P), and abnormalities in the inhibitory transmitter's activity like vasoactive intestinal peptide and nitric oxide. Although most patients with STC have idiopathic disease, the condition has also been reported to present following an inciting trigger like suffering from an injury to the pelvic plexus, hysterectomy or childbirth [13]. When STC does not respond to interventions and medical therapy, it is sometimes called 'colonic inertia'. Another congenital type of STC can originate from Hirschsprung's disease, a disease that is characterized by the absence of ganglion cells within the distal colon, most frequently present in infants, although in less serious cases can become manifest in later ages.

RECTAL EVACUATION DISORDERS:

The term 'Rectal evacuation disorders' refers to the presence of difficulties in defecating stools out of the rectum. This clinical condition can originate as a consequence of structural obstruction and abnormalities including anal stenosis, rectocele, neoplasms, intussusception, anal fissures, and mucosal prolapse. Other more common causes of rectal evacuation disorders include the presence of a functional defecatory disorder, which is a result of insufficient rectal propulsive forces, paradoxical contraction of the anus, and/or insufficient relaxation of the anal sphincter. Other terms that are usually used in the description of this condition include pelvic floor dyssynergia, obstructed defecation, anismus, and paradoxical pelvic floor contraction. Evidence to the presence of a functional defecatory disorder include prolonged straining (regardless of the consistency of the stool), dyschezia, digital manipulation (which is defined as the need for vaginal or perineal external pressure to be able to pass a bowel movement), and failure to respond to standard laxative interventions [14].

CLINICAL EVALUATION:

Proper evaluation of an individual with primary constipation must always begin with a thorough detailed medical, surgical, and dietary history of the patients that addresses any comorbid condition that may be linked to the constipation and reviewing all drugs and pharmacological agents that are used by the patient. Over-the-counter medications and alternative and complementary therapies or practices must also be thoroughly assessed. One of the initial steps during assessment is the differentiation between chronic constipation and IBS. This is usually done by the application of the symptom-based clinical criteria like the ROME criteria or the Manning criteria for IBS. A diagnosis of IBS based on these criteria, and in the absence of any alarming manifestations, could potentially avoid unnecessary, expensive, invasive, and low-yield diagnostic investigations. It is essential to establish the accurate onset and duration of all clinical manifestations, the frequency and rate of bowel movements, the stool consistency, the presence of straining, and the caliber of stool. The Bristol stool form scale and the Bowel Function Index are both beneficial adjuncts to aid the patients in describing their stool form more accurately along with measuring their concept of the severity of their clinical manifestations. The Bristol stool form scale might also be beneficial to examine the colonic transit time, specifically in individuals who have suspected STC. Some strongly researchers advise for the use of dietary and stool diaries to examine fibers and fluids intake along with the frequency and quality of defecation [15].

PHYSICAL EXAMINATION:

A complete thorough physical examination is essential, including complete neurological assessment, to detect systemic diseases that may be playing a role in the disease. During abdominal physical examination, it is essential to look for any abdominal tenderness and masses, along with the presence of stool. A carefully performed perineal and digital rectal examination can also be of high importance and could in fact be the most important step of the examination. Digital rectal examination that includes palpation of the anal canal could help in the identification of hard stools, masses (if present), hemorrhoids, anterior rectocele, or pain that is suggestive of the presence of an anal fissure. DRE could also allow for assessing neurological integrity and the presence of any pelvic floor muscle dysfunctions or tenderness. During performing DRE. the patient must be told to push simulating the process of defecation, with the examiner's other hand being placed over the abdomen to investigate the effort of the push. In normal individuals, the sphincter of the anus and the puborectalis must relax following descent of the perineum, whereas the abdominal muscles should contract during the simulation of defecation. The presence of a tightening of sphincters is usually an indicator for the presence of a pelvic floor dysfunction (PFD) and is thus considered to be a reliable test to detect and ass dyssynergia in individuals who present with chronic constipation, facilitating distinguishing of patients who will require further physiological investigations like defecography and anorectal manometry [16].

DIAGNOSTIC TESTING:

A CBC, chemistry panel, and thyroid gland function lab investigations are usually performed in everyday practice to rule out the presence of underlying metabolic conditions that could be causing the development of chronic constipation. Other than those investigations, other investigations are not usually needed. actually, the importance of routine diagnostic investigations in individuals who have chronic constipation with the absence of other alarming clinical manifestations is generally not high.

Colonoscopy must be kept only for individuals who meet the criteria of colon cancer screening and for individuals who show the presence of any of the alarming symptoms (including rectal bleeding, iron deficiency anemia, heme-positive stool, cachexia, and obstructive manifestations) [39, 40]. The research that supports the use of abdominal X-ray, barium enema, and anorectal ultrasound during the assessment of constipation is not strong, and these investigations, therefore, must not be routinely used [41]. If the condition is refractory to standard interventions that include increasing dietary fibers and/or using laxative therapy, physiologic investigations that focus on colonic transit and mechanics of evacuation might be beneficial.

MEDICAL MANAGEMENT OF CHRONIC CONSTIPATION:

Several treatment approaches can be generally used during the management of patients who present with chronic constipation (could be indicated in both primary constipation cases and secondary constipation cases). These approaches can range from over-the-counter stool softener medication to more advanced drugs. Although there are different drugs that are available for the treatment of patients with chronic constipation, a significant number of these patients are not completely satisfied with the results of their treatment. Constipation that is secondary to another disease or that is a result of an adverse event following the use of a pharmacological agent must both be treated by targeting the underlying cause that is causing the constipation. Patients who have chronic constipation due to PFD must be started on biofeedback therapy, as this method of treatment has been proven to have benefits that could even result significant improvements in the quality of life.

DIETARY AND LIFESTYLE MODIFICATIONS:

Individuals who present with chronic constipation must be generally encouraged to increase the intake of water and fibers within their diet and to start doing modest exercise regularly. Evidence that supports the efficacy of these lifestyle modifications is scant. Moreover, several research studies have assessed the real correlation between higher water intake alone and its impact on patients with chronic constipation and have not been successful to show significant outcomes that will support the understanding that higher intake of fluids will be successful in improving the clinical manifestations of constipation. Although exercise might positively impact the functions and motility of the bowels, proper control of other confounding variables like the diet and personality usually limits the ability to get solid conclusions on whether physical exercise alone a beneficial management for patients with chronic constipation is. A diet that is includes high fiber content can cause an increase in weight of stool and aid in intestinal transit, causing increased frequency of stool [17].

BULK LAXATIVES:

Other than increasing the fibers content in diet, pharmacological bulking agents which come in the form of natural soluble fiber (like psyllium and wheat dextrin), semi-synthetic fiber (like methylcellulose), and synthetic polymers (like polycarbophil) could also be used safely as first-line drugs for the treatment of chronic constipation. Fiber acts by trapping water within the lumen of the GI tract, leading to an increase in the weigh and bulk bulk of stool, and reducing consistency. It can also stimulate the motility of the colon and decrease the transit time. Bulking drugs are generally most beneficial in patients with NTC. A standard starting dose of the drug is a heaping tablespoon of the bulking agent dissolved within eight oz of water, preferably in the morning time. Developing abdominal distention and bloating is a common adverse event of the use of bulking agent treatment, especially in the beginning of treatment. This might limit their use in individuals who suffer from bloating [18].

CONCLUSIONS:

Chronic constipation is a common health problem that has great importance. Clinicians must have great understanding of the common underlying etiologies and pathophysiologies that cause chronic constipation and be able to distinguish between different types of constipation through proper history obtaining, complete physical examination, and the use of available testing modalities. Several therapeutic interventions are generally used for the medical management of constipation, and physicians should modify treatment plans according to the most likely etiology, patients' response, and the presence of concomitant symptoms. Some experts recommend a step-wise approach for the management of constipation, starting treatment with lifestyle modifications and bulking pharmacological agents, continuing to over-the-counter laxatives, and then to prescription agents in refractory cases. There are sometimes in everyday practice when the use of combination therapy might be needed to improve patients' manifestations and quality of life, but this has not been well-studied or published in the medical literature to provide solid guidelines. Newer agents that have shown promising results in clinical trials and practice are now available, and additional new drugs are in different stages of development.

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