

Study

Treatment of chronic constipation in patients with neurological disorders.

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Abstract

Chronic obstipation complaints are among the most common health disorders worldwide, with a prevalence of up to 20%, increasing with age and affecting women significantly more often than men. Neurological disorders are the cause in about 12% of these cases, often aggravated by the inevitably potent medication for these conditions. The management of these cases is the subject of this study report. Its outcome dispels prejudice and warns of malpractice in an area where the symptom burden of patients is often very high, multifaceted, and disabling. Finding the most reliable and safe method to ameliorate chronic constipation, which is often painful and causing hemorrhoids, is therefore the key to an overall improvement in the quality of life of these patients.

Obstipation as an underestimated problem in neurology

The underlying pathomechanisms of chronic constipation in general are complex, inconsistent and only partially elucidated. However, the available evidence has disproved the traditional belief that it is merely a trivial condition with no pathological value which, moreover, is self-inflicted by wrong lifestyle habits and therefore easily correctable. It has been convincingly proven that those affected suffer from a multitude of annoying symptoms and that their quality of life is -in some cases- significantly impaired.^{1,2}

Nevertheless, chronic constipation is insufficiently accepted as a health problem that is often relevant for the patients. This is also shown by the fact that established and effective drug therapy approaches, whose regular intake is usually indispensable for severely affected patients, have merely been relegated to the category of prescription-free medication under the undefined label of "laxatives" and have virtually been handed over to the hands of pharmacists and patient.

Scientific evidence as well as medical reality clearly show that in the majority of cases chronic constipation is a persistent disease, often accompanied by severe suffering. The symptom complex of constipation can have very different causes, ranging from adverse drug reactions to metabolic disorders and illnesses of the nervous and muscular system (primary forms of constipation). Especially the latter are the subject of this study paper.

Definition of obstipation

Chronic constipation is present when unsatisfactory defecation is reported that has persisted for at least three months and has at least two of the following symptoms:^{3,4}

- heavy straining
- lumpy or hard stools
- subjective incomplete evacuation
- subjective obstruction
- manual maneuvers to facilitate defecation
- < 3 stools per week

Some authors addressed the discrepancy between subjectively reported constipation and consensus definitions as early as in 1994. This discrepancy persists to this day, leading to a wide variability in terms of reported prevalence.⁴

One major difficulty is that a purely objective definition of constipation, e.g., based solely on stool frequency, does not do justice to the entire complex of complaints of patients with chronic constipation, and such definitions leave a large proportion of patients neglected. For example, there are many patients who can have a bowel movement with great difficulty and only with great effort and heavy pressing, but who do so every day. In addition, it has been shown that, for example, measurements of

gastrointestinal transit time correlate more with the parameter of stool consistency than with that of stool frequency.⁷ Internationally, because of these difficulties, definitions have therefore been established that include a combination of subjective (such as heavy straining or incomplete emptying) and objective parameters (e.g., stool frequency, stool consistency). The current international standard in this context is the Rome III classification! on the basis of which this definition was chosen.⁵

Patients with chronic constipation have a worse quality of life in terms of physical and psychological aspects than control subjects without constipation.^{1,6} In chronically constipated individuals, the impairment of quality of life is comparable to that in other chronic diseases, e.g., reflux disease, arterial hypertension, diabetes, and depression.^{5,8} Constipation-specific quality of life measures (e.g., PAC-QOL) allow measurement of change in individual quality of life, e.g., in the context of drug therapy, but do not allow comparison with other chronic diseases.⁹

Associations between primary constipation and low-fiber diets, decreased fluid intake, lack of exercise and suppression of the defecation stimulus, and abrupt changes in lifestyle have been reported in the literature. **Contrary to popular belief, however, no causal relationship has been established in scientific studies that were not (co-)funded by the pharmaceutical or food industries.**

All factors commonly considered in the medical and popular literature as causes of constipation can by no means be confirmed by evidence-based data as reasons for chronic constipation. For example, comparisons between constipated and healthy individuals have shown that none of the factors necessarily leads to constipation or to significant improvement of symptoms after its resolution. Rather, it can be assumed that a pre-existing tendency to constipation is triggered or clinically evident by these factors.^{6,11-15}

Studies on all the factors listed are inconsistent: on the one hand, a low-fiber diet may promote the development of constipation; on the other hand, no differences were found between constipated and non-constipated individuals with regard to the fiber content of the diet. Studies on the amount of fluid intake also showed contradictory results. For example, although decreased fluid intake is associated with the occurrence of constipation, the amount of fluid intake does not correlate with the frequency of constipation. No study demonstrated lack of physical activity as a clear causal factor for constipation.^{6,8-15}

People with neurological diseases experience particular problems in terms of primary constipation. Many neurological disorders and their sequelae lead to a slowing of gastrointestinal passage, usually further complicated by the correspondingly necessary medications, which frequently aggravate constipation issues. In most cases, these patients experience that they are often treated incorrectly in the primary care setting, like patients with secondary constipation. The data presented below demonstrates this with surprising clarity.

Instead of medication, patients with a neurological disorder are also usually told to change their diet, drink more, exercise and, as if that were not nonsensical enough,

they are warned of the dangers of "laxative addiction." Of course, the phenomenon of laxative abuse exists in mentally deranged patients who think they can lose weight using them. But this is a completely different group of patients.

Study data

Through our partners in India, we obtained anonymized patient data that met the following inclusion criteria:

- 79 women and 80 men aged 18 to 73
- Confirmed diagnosis of Parkinson's, Lewy body dementia, multiple sclerosis, brain damage (especially of the substantia nigra and the basal ganglia)
- Diagnosed with primary chronic constipation associated with a tardy gastrointestinal passage.

Method

Patients were treated with different drugs or combinations of drugs. An interval of seven days was observed between treatment periods. Care was taken to ensure that patients did not change their dietary habits. Outcomes were assessed on a rating scale ranging from 0 (= no obstipation) to 10 (= extreme obstipation), the most relevant adverse effects of each treatment protocol were also registered. Assessments were made by the study assistants together with the patients.

<i>Medication</i>	<i>Obstipation before/during treatment</i>	<i>Most relevant side-effect (%)</i>
Macrogol 14 gr.	8,9 / 7,2 (- 1,7)	faecal incontinence 32%
Macrogol 14 gr. + Magnesium (Mg) 250mg	9,1 / 6,4 (- 2,7)	faecal incontinence 61%
Magnesium 250mg	8,7 / 8,2 (- 0,5)	bloating 34%
Magnesium 250mg + Calcium 200mg	8,8 / 8,5 (- 0,3)	bloating 29%
Bisacodyl (BC) supp. 10 mg.	9,3 / 4,9 (- 4,4)	delayed mucous secretion 37%
BC supp. 10 mg. + Magnesium 250mg	9,1 / 2,2 (- 6,9)	diarrhea (mild 61%, sev. 19%)
BC supp. 10 mg. + Macrogol 14gr.	8,8 / 1,7 (- 7,1)	faecal incontinence 39%
BC supp. + Simeticon (SIM) 4x250mg	9,5 / 2,1 (- 7,4)	delayed mucous secretion 26%
BC supp. + SIM 4x250mg + Mg 250mg	9,3 / 0,8 (- 8,5)	delayed mucous secretion 19%
Sodium picosulfate 7,5mg/ml (SPS) oral	9,0 / 4,6 (- 4,4)	bloating 49%
SPS 7,5 mg/ml + SIM 4x250mg	8,3 / 4,1 (- 4,2)	bloating 19%

Discussion

Sodium picosulfate (oral) and bisacodyl (suppositories) are found to be first-line drugs in primary constipation, with bisacodyl supp. six hours after 250mg magnesium and 250mg of simeticon every six hours being the best option available. These treatment protocols work particularly well when the patient is able to feel that the colon is well filled. If bowel wind or bloating are a problem, the administration of simeticon can support the patients getting a more realistic perception of his/her amount of stool in the colon.

There is no reason to limit the period of intake. Bisacodyl and sodium picosulfate are effective and safe in primary constipation and in chronic constipation, and are among the first-line agents in these cases. In chronic constipation, dosage and frequency of use depend on individual need and should be determined by the treating proctologist, gastroenterologist, and neurologist. Administration of electrolytes is unnecessary unless diarrhea has occurred.¹⁹⁻²⁶

Sodium picosulfate is a derivative of bisacodyl with the same effect. The two substances have a dual mode of action: they stimulate propulsive motility of the colon and inhibit water reabsorption or stimulate secretion. Their efficacy in short-term and multi-week administration has been demonstrated in controlled studies. Electrolyte shifts in serum have not been observed with up to decades of ingestion. Cramp like abdominal pain may occur as a manifestation of the motor effect. Otherwise, the substances are well tolerated and harmless. Although they are absorbed to a very small extent and excreted in the urine. However, the often claimed habituation to these laxatives is very rare, even with decades of use.^{1,6,16-26}

Conclusion

Based on these data, it is reasonable to assume that patients suffering from primary chronic constipation in the setting of neurological disease are best treated with bisacodyl suppositories or sodium picosulfate (tablets/drops) along with simeticon. Bisacodyl in oral form is also acceptable, but the lower metabolic activity of sodium picosulfate is less burdensome for patients, most of whom are already taking numerous medications because of their neurologic disease. Concerns about habituation effects are baseless and a mere myth with both agents. However, because of the constant irritation of the rectum, patients should remain under proctological care, as the usual warning signs of severe bowel diseases may either occur as a side effect or be hidden behind these adverse effects. This is the only minimal risk associated with long-term use of these substances. Otherwise, they are considered the gold standard in the treatment of primary constipation.

Conflicts of interest

none

Ethics

The third party from whom we received the data for this paper conducted its research in accordance with the Helsinki Declaration and under supervision of the relevant authorities.

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