



Contents lists available at ScienceDirect

Journal of Pediatric Surgery

journal homepage: www.elsevier.com/locate/jped surg

Correspondence

Letter to the Editor

Dear Editor,

I found the recent article “Are Senna based laxatives safe when used as long term treatment for constipation in children?” (J Pediatr Surg. 2018 Jan 31) [1], which justifies recommendations by Bischoff et al., to use large doses of Senna (67 mg (range: 5–175 mg) for a long time (more than 329 days) in the treatment of chronic constipation (CC) in children [2].

There is now convincing evidence for efficacy of stimulant laxatives (Senna, bisacodyl, and picosulfate) in well-designed randomized clinical trials published within the past years. In a randomized controlled trial of children with CC, pelvic physiotherapy was more effective than standard medical care [3]. Biofeedback therapy has been recommended as the first-line of treatment for dyssynergic defecation [4]. Polyethylene glycol (PEG) solution laxative has been shown to be effective and safe for CC in children [5]. PEG is becoming a laxative of choice for children constipation [6]. Transcutaneous needle-free injection of botulinum toxin into the external anal sphincter is a safe treatment for children with chronic constipation [7].

From this incomplete list of effective laxatives and methods for conservative treatment of CC, which are most often used in conjunction with each other, Bischoff and co-authors have chosen Senna and propose to use it for a long time and in large doses. With the almost identical effectiveness of the listed laxatives, is Senna the safe one?

- Does it have toxic properties?
- Does it have carcinogenic properties?
- How does prolonged nonspecific stimulation of the muscular fibers of the colon affect its function?

The group of authors in the review of the IV level of evidence conclude that Senna is a safe treatment option for constipation in children. They chose to review the literature to identify side effects in children taking this medication [1]. However, side effects from long-term use of Senna may appear only in the adult. If the side effects of Senna in adults are observed, can Senna be considered safe in children?

In another of overview of systematic reviews the following is written: “Serious adverse effects were noted only for four HMs (herbal medicines): *Herbae pulvis standardisatus*, *Larrea tridentate*, *Piper methysticum*, and *Cassia senna*. The most severe adverse effects were liver or kidney damage, colon perforation, carcinoma, coma, and death” [8].

Despite the fact that the study in rats did not find carcinogenesis of Senna administered for 110 week, we cannot ignore clinicians' opinions: “Even so, the recommendation for Senna is only considered moderate. There has been intense debate as to the potential risk of colonic carcinoma in the long-term use of Senna, based on the observation that Senna use leads to Melanosis coli and alleged risk for cancer of the colon” [9].

In the literature, there are two opposing opinions about stimulant laxatives. Some researchers believe that stimulant laxatives can damage the colon when used long-term, and that patients can become dependent on them. Others believe that there is no evidence to support the beliefs that stimulant laxatives are harmful to the colon in animals or man [10].

Our studies of the pathogenesis of functional constipation have found that in some children over the age of 10–15 years, the diameters of the rectum and sigmoid colon decrease, sometimes to normal sizes. However, this is always accompanied by symptoms of irritation of the rectosigmoid and the appearance of pain syndrome. An analysis of the literature and these observations led us to the conclusion that the severity of constipation decreases as a result of treatment, but irritable bowel syndrome develops [11]. Severe cases of damage to the colon after applying stimulant laxatives are probably rare. But it is possible that they are not fixed [12]. We described this observation [13] (Fig. 1).

Long-term use of Senna in children cannot be considered a safe treatment. Periodic application of Senna as well as other stimulant laxatives at recommended doses may be appropriate in patients with CC, since they contribute to a decrease in the diameter of the rectum. In such cases, it is advisable to administer them directly into the rectum.

I ask you to publish my review, so that the doctors are aware of the danger of Senna's long-term appointment.

Michael D. Levin

State Geriatric Center, Amnon VeTamar, ½, Netanya 42202, Israel

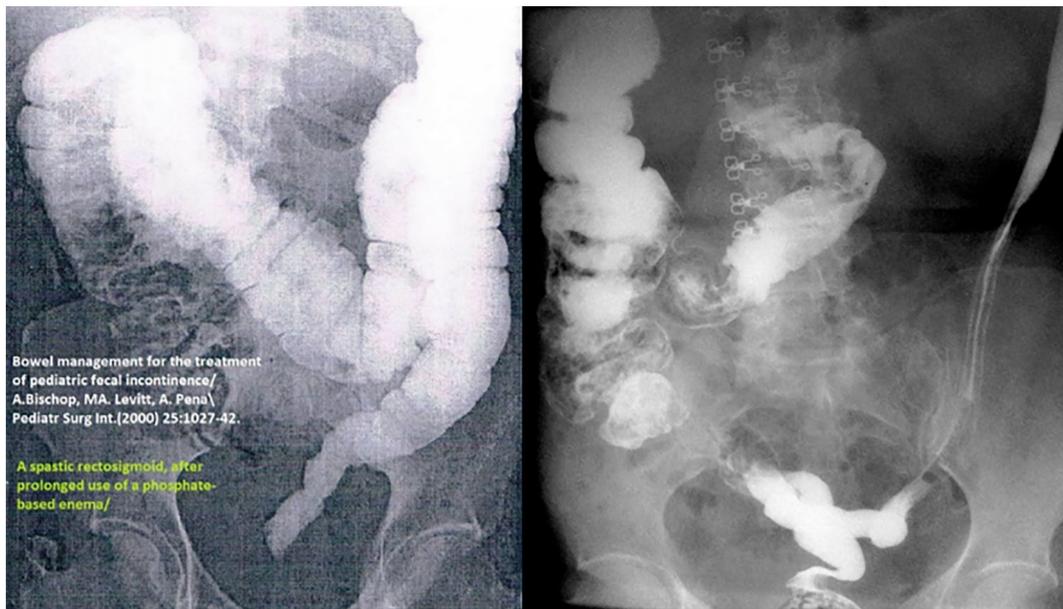
Tel.: +972 538281393

E-mail address: Nivel70@hotmail.com

<https://doi.org/10.1016/j.jpedsurg.2018.03.007>

References

- Vilanova-Sanchez A, Gasior AC, Vilanova-Sanchez A, et al. Are Senna based laxatives safe when used as long term treatment for constipation in children. J Pediatr Surg 2018 [pii: S0022-3468(18)30003-4].
- Bischoff A, Brisighelli G, Dickie B, et al. Idiopathic constipation: A challenging but manageable problem. J Pediatr Surg 2017. <https://doi.org/10.1016/j.jpedsurg.2017.09.022> [pii: S0022-3468(17)30628-0. Epub ahead of print].
- van Engelenburg-van Lonkhuyzen ML, Bols EM, Benninga MA, et al. Effectiveness of Pelvic Physiotherapy in Children With Functional Constipation Compared With Standard Medical Care. Gastroenterology 2017;152(1):82–91. <https://doi.org/10.1053/j.gastro.2016.09.015> [Epub 2016 Sep 17].
- Rao SS, Patcharatrakul T. Diagnosis and Treatment of Dyssynergic Defecation. J Neurogastroenterol Motil 2016;22(3):423–35. <https://doi.org/10.5056/jnm16060>.
- Savino F, Viola S, Erasmo M, et al. Efficacy and tolerability of peg-only laxative on faecal impaction and chronic constipation in children. A controlled double blind randomized study vs a standard peg-electrolyte laxative. BMC Pediatr 2012;12:178. <https://doi.org/10.1186/1471-2431-12-178>.
- Phatak UP, Pashankar DS. Role of polyethylene glycol in childhood constipation. Clin Pediatr (Phila) 2014;53(10):927–32. <https://doi.org/10.1177/0009922813505699> [Epub 2013 Oct 9].



A

B

Fig. 1. Irritable bowel syndrome (IBS) with an extreme damage of the colon after treatment with stimulant laxatives. A) A spastic rectosigmoid after prolong use phosphate-based enema [12]. B) IBS in older women with a sharp narrowing of the left colon ((before right-sided colostomy) [13].

- [7] Keshtgar AS, Ward HC, Clayden GS. Transcutaneous needle-free injection of botulinum toxin: a novel treatment of childhood constipation and anal fissure. *J Pediatr Surg* 2009;44(9):1791–8. <https://doi.org/10.1016/j.jpedsurg.2009.02.056>.
- [8] Posadzki P, Watson LK, Ernst E. Adverse effects of herbal medicines: an overview of systematic reviews. *Clin Med (Lond)* 2013;13(1):7–12.
- [9] Leung L, Riutta T, Kotecha J, et al. Chronic constipation: an evidence-based review. *J Am Board Fam Med* 2011;24(4):436–51. <https://doi.org/10.3122/jabfm.2011.04.100272> [Review].
- [10] Wald A. Constipation: Advances in Diagnosis and Treatment. *JAMA* 2016;315(2):185–91. <https://doi.org/10.1001/jama.2015.16994>.
- [11] Levin MD. <https://www.anorectalmalformations.com>. Anorectum & Colon / Pathogenesis of functional constipation.
- [12] Bischoff A, Levitt MA, Peña A. Bowel management for the treatment of pediatric fecal incontinence. *Pediatr Surg Int* 2009;25(12):1027–42. <https://doi.org/10.1007/s00383-009-2502-z> [Epub 2009 Oct 15].
- [13] Levin MD, Korshun Z, Mendelson M. Rare case of surgical treatment of the irritable bowel syndrome. *Novosti Khirurgii* 2012;20(5):123–7 [Russian. Abstract in English].