Evidence for Self-Medication
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Bisacodyl: comprehensive findings direct effective and safe use in constipation

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For the first time since bisacodyl was licensed in the 1950s, an up-to-date review has provided a thorough summary of the pharmacological and clinical data concerning this prokinetic and secretagogic laxative. On the basis of the knowledge gained after numerous years of experience with the drug, the review derives practical guidance on advising patients to ensure an even more effective and safer use of bisacodyl.

Occasional constipation is a case for self-medication

Constipation is one of the most common gastrointestinal diseases, with an estimated global prevalence of 14% [1]. The most significant symptoms include an infrequent passage of hard stools, excessive straining during defecation and the feeling of incomplete bowel emptying. When constipation is an occasional event, it can usually be treated with self-medication. The available treatment options here include – in addition to the osmotic laxatives – stimulant laxatives such as bisacodyl. Stimulant laxatives combine prokinetic and secretagogic (secretion-promoting) effects. The review by Corsetti et al. provides a detailed summary of statements concerning the drug bisacodyl, and thereby allows effective and safe advice to be given to patients with constipation [2].

Bisacodyl has only local effects

Once the gastroresistant and enteric coating of bisacodyl tablets has dissolved in the colon, the prodrug is converted into the active metabolite bis-(p-hydroxyphenyl)-pyridyl-2-methane (BHPM). This metabolite increases the motility and water content of the stool (**Fig. 1**). The active metabolite does not undergo systemic absorption.

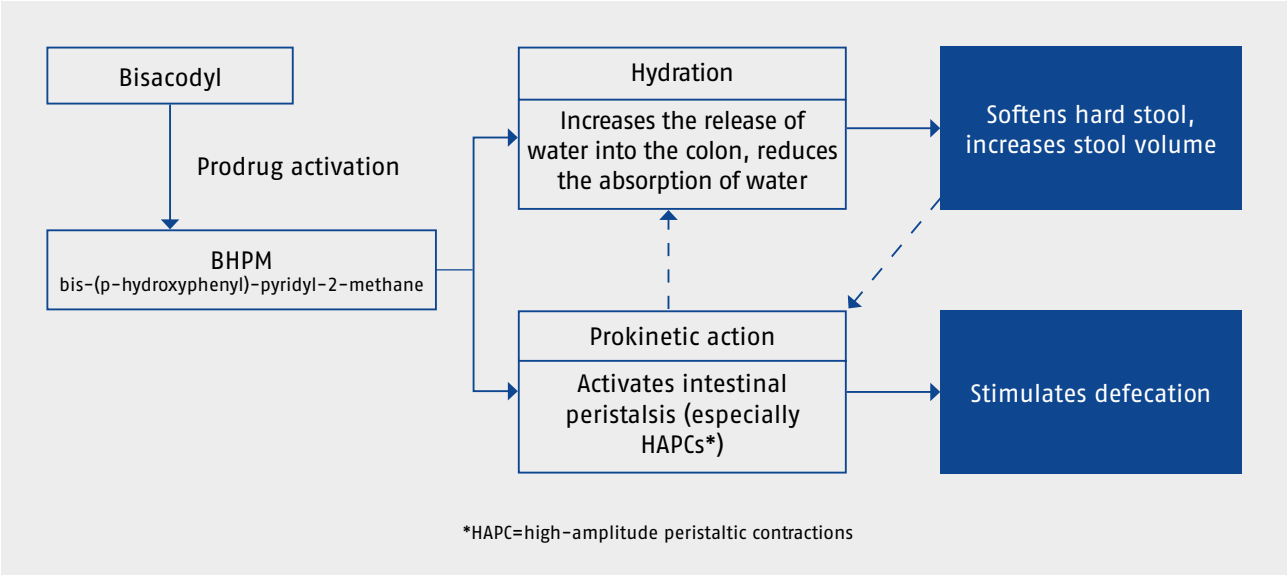

Fig.1. Mode of action of the stimulant laxative bisacodyl. The increase in muscle tone is achieved through a direct myogenic effect involving L-type calcium channels. Two mechanisms are involved in BHPM-induced ion secretion: potassium secretion, when BHPM acts on the mucosa from the intestinal lumen, and neuronally-mediated chloride and hydrogen carbonate secretion after absorption into the intestinal wall.

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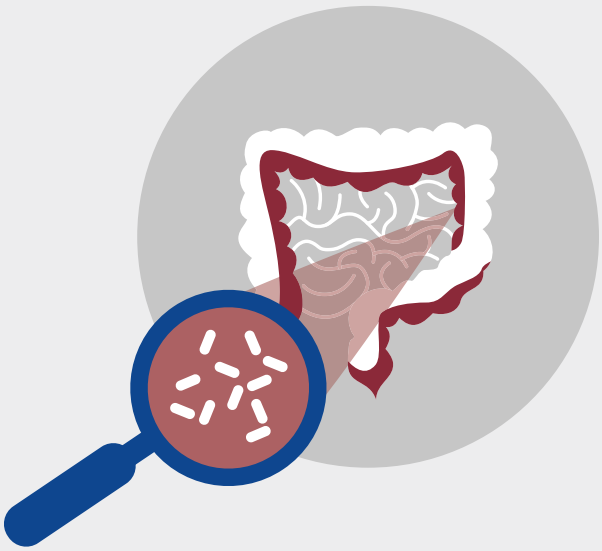

In patients with constipation, significantly lowered concentrations of Bifidobacterium and Lactobacillus were observed, together with increases in potentially pathogenic bacteria and/or fungi

Normalization of evacuatory function with bisacodyl treatment was accompanied by:

- a **decrease** in counts of potentially pathogenic microorganisms (E. coli, fungi),
- an **increase** in counts of obligate microflora (Bifidobacterium, Bacteroides, Streptococcus fecalis).

Fig. 2. Bisacodyl causes a decrease in potentially pathogenic microorganisms and a faster regeneration of obligate gut flora.

Significant improvement in objective and subjective symptoms

In a large, randomised, double-blind and placebo-controlled study published in 2011 [3], patients were given 5–10 mg bisacodyl (n = 247) or placebo (n = 121) once daily for four weeks. The number of complete, spontaneous bowel movements (CSBM) per week – which was 1.1 at the beginning of the study – increased significantly ($p < 0.0001$) to 5.2 in the active treatment group, whereas there was only a minor increase to an average of 1.9 CSBM per week in the placebo group. Patients under bisacodyl treatment also benefitted from a marked improvement in quality of life. As yet unpublished data showed that subjective symptoms (e.g., bloating and discomfort) also improved under bisacodyl and patient satisfaction with their bowel habits increased (statistically significant increase compared with placebo).

Tolerability increases with dose adjustment and duration of use

Diarrhoea and abdominal pain are among the most common unwanted effects of treatment with stimulant laxatives such as bisacodyl. According to study data, these side effects markedly improved parallel to an adjustment of the individual dose and also as treatment progresses. Available data (guidelines, review articles, clinical studies, case reports) allow us to conclude that when used correctly, stimulant laxatives such as bisacodyl are also safe when taken in the long-term and their use is not associated with habituation [4].

First indications of a positive effect on the gut microbiome

The review by Corsetti et al. [1] described the first results of studies that examined the influence of bisacodyl on the gut microbiome [5]. Compared to healthy subjects, faecal samples of patients with chronic constipation showed a reduced concentration of bifidobacteria and lactobacilli as well as an increased concentration of potentially pathogenic bacteria and/or fungi. Four weeks of treatment with bisacodyl led to a normalisation of intestinal transit time and a decrease in potentially pathogenic micro-organisms, whilst the gut flora returned to normal, including an increase in Bifidobacterium and Bacteroides strains.

Summary

Bisacodyl has a dual mechanism of action: prokinetic and hydrating (anti-absorptive, secretory). Bisacodyl makes stools softer, shortens stool transit time, and eases defecation. Bisacodyl improves the quality of life of patients and its action is purely local. Results from studies also indicate positive effects on the gut microbiome. It appears advisable to start treatment with a low dose of bisacodyl (5 mg) and then increase wherever necessary. Tolerability generally improves when the dose is adjusted to patient needs and with increasing duration of treatment. Clinical experience, guidelines and review articles suggest that there are no concerns on a long-term use of bisacodyl. A combination with other laxatives may be considered for patients who do not respond to monotherapy.

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