A Review of Laxative Therapies for Treatment of Chronic Constipation in Older Adults

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ABSTRACT

Background: Multiple studies have addressed the treatment of chronic constipation in adults in general; however, less guidance is available for treating this condition in older patients.

Objective: The aim of this paper was to review the effectiveness of laxatives for chronic constipation in the elderly.

Methods: MEDLINE, Web of Science, International Pharmaceutical Abstracts, and the Cochrane Database of Systematic Reviews were searched for English-language articles evaluating the treatment of chronic constipation in older individuals from the inception of the databases until October 2010. Search terms included *constipation, treatment, laxative, elderly,* and *geriatric*. Articles were excluded if the mean age was <65 years.

Results: Thirty-one trials were identified. These studies varied widely in terms of methodology, quality, sample size, efficacy end points, and duration. Mean stool frequency was 9.08 bowel movements per week with psyllium and 8.29 per week with calcium polycarbophil ($P = 0.04$). Docusate sodium daily, docusate sodium q12h, and docusate calcium daily for 3 weeks produced a mean stool frequency of 1.95 bowel movements per week versus 1.50 for placebo (P = NS), 2.29 versus 1.76 (P = NS), and 2.83 versus 1.75 ($P < 0.02$), respectively. Mean stool frequency with lactulose versus placebo was 0.7 and 0.5 bowel movements per day ($P < 0.02$). In patients receiving polyethylene glycol or lactulose, mean stool frequency was 1.3 and 0.9 bowel movements per day ($P = 0.005$). In a study comparing senna plus a bulking agent with lactulose, mean stool frequency was 4.5 per week for the combination product versus 2.2 per week for lactulose ($P < 0.001$). A study comparing sodium picosulfate with senna reported a mean stool frequency of 0.71 and 0.63 per day (P value not reported). Lubiprostone was associated with 5.69 spontaneous bowel movements per week versus 3.46 per week for placebo ($P = 0.001$).

Conclusions: Higher-quality trials evaluating the treatment of constipation in older patients are needed to create a basis for more definitive recommendations in this population. The approach to older adults with constipation should be individualized. (*Am J Geriatr Pharmacother*. 2010;8:514–550) © 2010 Elsevier HS Journals, Inc.

Key words: constipation, older adults, stool softeners, laxatives.

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INTRODUCTION

Constipation is a common complaint for many patients; in adults, the reported prevalence ranges from 2% to 28%.[1–4] Although many individuals in the United States self-medicate with over-the-counter (OTC) treatments or home remedies, constipation accounts for many physician office visits and consumes considerable health care dollars and resources each year. Shah et al[5] reported 7.95 million ambulatory care visits annually from 2001 to 2004 for this condition, up from the 2.5 million visits per year for the period 1958 to 1986.[6] One estimate of the mean annual direct health care cost for constipation was $7522 per patient,[7] and the mean cost for diagnostic workup of constipation has been reported to approach $3000 per patient.[8] Nursing resource utilization costs of caring for long-term care residents with constipation has been estimated to be $2252 annually per resident.[9] Additional health care cost may be attributed to emergency department or gastroenterology specialist office visits. During the period 2001 to 2004, >1 million emergency department visits occurred annually, at a rate of 3.6 visits per 1000 population (95% CI, 3.3–4.0).[5] Gastroenterologist visits accounted for 14.1% (95% CI, 9.8%–20.7%) of all constipation visits during the same period. This could further contribute to the high cost of health care and resource utilization associated with constipation.

In institutionalized patients >65 years of age, constipation can have a tremendous impact—it is costly to care for and manage, is associated with decreased quality of life, and if not managed adequately, can result in serious, potentially fatal complications.[10–12] The purpose of this article was to review published studies evaluating the agents used for the treatment of chronic constipation in older persons.

PATIENTS AND METHODS

A search of MEDLINE, Web of Science, International Pharmaceutical Abstracts, and the Cochrane Database of Systematic Reviews was conducted from inception of the databases to October 2010. English-language articles presenting clinical trials or systematic reviews describing the use of laxatives for the treatment of chronic constipation specifically in patients ≥65 years of age were identified. Search terms included *constipation, treatment, laxative, elderly,* and *geriatric*. In addition, the name of each laxative (bran, psyllium, ispaghula, calcium polycarbophil, methylcellulose, docusate, lactulose, magnesium hydroxide, magnesium citrate, magnesium sulfate, polyethylene glycol [PEG], senna, bisacodyl, lubiprostone, prucalopride) was also searched in combination with the terms *constipation, elderly,* and/or *geriatric*. The reference lists of the identified articles were reviewed for additional articles, and relevant information was extracted. Articles were excluded if the mean age was <65 years or an age range was reported but without a clearly identified subgroup of patients ≥65 years.

In 2005, two large systematic reviews[3,13] evaluating the efficacy and tolerability of laxative therapy for the treatment of chronic constipation in adults were published. The American College of Gastroenterology Chronic Constipation (ACG CC) Task Force[3] evaluated randomized controlled trials (RCTs) of adults with chronic constipation who were treated with laxatives available in the United States. Ramkumar and Rao[13] reviewed studies evaluating laxatives for chronic constipation in adults that also included agents available outside the United States. Although these reports were largely similar, they contained slight differences in the number of trials reviewed as well as the recommendations and levels of evidence assigned (**Table I**).[3,13] From these sources, all studies conducted in older patients (≥65 years of age) or with clearly identified older populations not previously identified were evaluated for inclusion in this review.

Definition and Epidemiology

In general, *constipation* is defined as a functional bowel disorder characterized by difficult, infrequent, or incomplete defecation.[14] However, various definitions have been used by both health care practitioners and patients to describe the condition.

Standardized criteria, such as the Rome III criteria,[14] have been composed for diagnostic purposes and are often used to define chronic functional constipation in clinical trials (**Table II**). To meet the definition of *chronic constipation*, the diagnostic criteria listed in **Table II** must have been present for ≥3 months, with symptom onset ≥6 months before diagnosis.

Definitions such as the Rome III criteria, however, may not encompass the perceptions of all patients with constipation. A wide range of personal beliefs regarding bowel regularity exist, and numerous symptoms are expressed by patients when describing constipation.[3,15] Observational studies have reported that patients' perceptions of constipation often do not meet the Rome III criteria.[2,16,17] Broader definitions have been proposed from the ACG[3,18] and the American Gastroenterological Association (AGA)[19] to describe constipation in clinical practice. The ACG considers chronic constipation to be a "symptom-based disorder defined