

Constipation in Older People: A Consensus Statement

Authors: Anton Emmanuel¹, Francesco Mattace-Raso², Maria Cristina Neri³, Karl-Uwe Petersen⁴, Enrique Rey⁵, June Rogers⁶

Affiliations: ¹GI Physiology Unit, University College London, London, United Kingdom; ²Department of Geriatric Medicine, Erasmus Medical Centre, Rotterdam, The Netherlands; ³Istituto Geriatrico “Pio Albergo Trivulzio”, Milan, Italy; Faculty of Medicine, RWTH Aachen, Aachen, Germany; ⁵Instituto de Investigación Sanitaria San Carlos, Division of Digestive Diseases, Hospital Clínico San Carlos, Department of Medicine, Universidad Complutense de Madrid, Madrid, Spain; ⁶PromoCon, Disabled Living, Manchester, United Kingdom.

Corresponding Author: TBC

Disclosures: AE has acted on advisory boards for Allergan, Almirall, Astellas, Coloplast, Hollister, Shire, Sucampo, Takeda and Wellspect

ABSTRACT (WORD LIMIT: 250 WORDS; CURRENT WORD COUNT: 250)

Background and Aims: Chronic constipation is a serious medical condition that affects 30–40% of people over 60 years old. Although not normally life-threatening, constipation reduces quality of life by the same extent as diabetes and osteoarthritis. There are currently no Europe-wide guidelines for treating constipation in older people although there is some country-level guidance for the general population. We have evaluated the existing guidance and best clinical practice in order to improve the care of older people with constipation.

Method: European healthcare professionals working in gastroenterology, geriatrics, nursing and pharmacology discussed the treatment of constipation in older people and reviewed existing guidance on the treatment of constipation in the general population. This manuscript represents the consensus of all authors.

Discussion: Most general guidance for constipation treatment recommends increased dietary fibre, fluid intake and exercise; however, this is not always possible in older patients. Although a common first-line treatment, bulk-forming laxatives are unsuitable for older people because of an associated need to increase fluid intake. Osmotic laxatives are likely to be the most suitable laxative type for older patients. Treatment is often hampered by reluctance to talk about bowel problems so healthcare providers should proactively identify older constipated patients who are self-medicating or not receiving treatment.

Conclusions: With certain modifications, general treatment guidelines can be applied to older people with constipation although specific guidelines are still required for this age group. Awareness of constipation, its complications and treatment options needs to be increased among healthcare providers, patients and carers.

What's Known?

Chronic constipation is a disorder that disproportionately affects older people; however, no clear pathophysiological reason for this has been identified. Untreated constipation can eventually lead to inpatient hospitalisation and increases the risk of impaction and faecal incontinence. Despite its high prevalence in older people, there are no treatment guidelines specific to this population at a national or European level.

What's New?

A panel of experienced healthcare professionals used their clinical expertise to evaluate the existing treatment guidelines for constipation and apply them to the treatment of constipation in older people. Based on existing guidance and their own clinical experience, the panel also proposed methods that will allow healthcare providers to identify patients with untreated constipation and enable treatment before they require admission to secondary care.

INTRODUCTION

Background

The median prevalence of constipation is estimated to be 16% in adults overall and 33.5% in those aged 60–101 years [Bharucha et al., 2013a]. However, despite its high prevalence, the precise symptoms of constipation are ill-defined [Chatoor et al., 2009]. In general, patients are reported to associate constipation with both infrequent bowel movements and stools that are difficult to pass; on the other hand, physicians have been found to prioritise stool frequency when diagnosing constipation [Herz et al., 1996]. It was these generally contrasting views that led to the development of the Rome Diagnostic criteria, which have become the most widely used clinical definition of constipation [Longsreth et al., 2006; Lacy et al., 2016].

Although constipation is not normally life threatening, it is known that its impact on the quality of life of those suffering with the condition can be as great as the impact of diabetes and osteoarthritis [Belsey et al., 2010]. Older patients with constipation are also at risk of psychological and social distress. The seriousness of constipation combined with its high prevalence has the potential to place a considerable burden on healthcare infrastructure; for example, in England between April 2013 and April 2014, there were 63,427 patients admitted to hospital with constipation and this accounted for 159,997 bed days [Health and Social Care Information Centre, 2015a]. Given that the average cost of a single bed day (excluding the cost of treatments and procedures) is £303 (~€375) to the UK National Health Service [Department of Health (UK), 2015] there is an undeniable economic case for identifying and treating constipated patients before they require hospital admission. Unfortunately, equivalent economic data for other European countries are not publicly available although a

recent comparative survey suggests that the prevalence of constipation is similar in France, Germany, Italy and the UK [Wald et al., 2008].

Chronic constipation is a particular problem in older people. It is estimated to affect 30–40% of older people living at home and over 50% of nursing home residents [Gallagher et al., 2009]. However, it is believed that the increased prevalence of constipation in older people is not due to age-related physiological changes; a healthy older person is as likely to experience constipation as a young person is [Norton, 2006; Gandell et al., 2013]. Reduced physical activity is thought to be a major cause of constipation in older people with active individuals being less likely to experience constipation than those who are chair-bound who are themselves less likely to experience it than the bed-bound [Kinnunen, 1991]. Similarly, constipation is more common in older people who are resident in long-stay wards than those who live in the community [Read et al., 1995] and has a prevalence of around 70% in this population [Rey et al., 2014]. It has been observed that being bedridden for over 15 days is significantly associated with dissatisfaction with bowel emptying movements [Cardin et al., 2010]. Another key cause of constipation, which is particularly relevant to older people, is the impact that polypharmacy has on the function of the gastrointestinal tract [Dennison et al., 2005]. Unfortunately, it may not be possible to reduce the number of medications an older person receives nor is it always possible to increase their levels of physical activity; this highlights the importance of effective pharmaceutical intervention to treat constipation in older people.

If constipation is not treated effectively, it can develop into faecal impaction [Gallagher et al., 2008], which can often require emergency hospitalisation. In England in 2014, 792 patients aged 60 years and over were admitted to hospital for

manual evacuation of impacted faeces; this age group represented 68% of all adult admissions for this procedure [Health and Social Care Information Centre, 2015b]. The average length of hospital stay for a patient with impaction was 7 days – a burden on healthcare resources that could easily be avoided through better management of constipation. Furthermore, uncontrolled constipation is the main risk factor associated with cases of faecal impaction in nursing homes [Rey et al., 2014].

However, appropriate management requires timely recognition of the symptoms and this can be complicated by the apparently contradictory connection between impaction and incontinence [Nelson et al., 1998]. For example, it has been shown that by ensuring complete rectal emptying it was possible to reduce the frequency of faecal incontinence in a group of elderly nursing home residents [Chassagne et al., 2000]. These findings appear to demonstrate that effective, early treatment of constipation can have a beneficial effect on the quality of life of frail patients. Bowel health is also related to overall health; for example, faecal impaction may be associated with urinary dysfunction and can lead to stercoral ulceration and bleeding [Gallagher et al., 2009; Serrano Falcón et al., 2016]. An additional risk of impaction is that it can cause faecal overflow that can be mistaken for incontinence; if this is treated with an anti-diarrhoeal it can make the impaction worse [Tracey, 2000; De Lillo et al., 2000]. Improperly diagnosed ‘overflow’ incontinence resulting from impaction can also be a key trigger of nursing home admission [Wilson, 2005; Norton, 2006]. The potential for confounded diagnosis that results in inappropriate treatment and subsequent failure of the condition to respond (or even get worse) only serves to underline the importance of identifying and treating chronic constipation in older people.

The Need for a Consensus Statement

Although several organisations have produced treatment guidelines that address chronic constipation in the general population [Paré et al., 2007; Piche et al., 2007; Bergert et al., 2010; Nederlands Huisartsen Genootschap, 2010; Bove et al., 2012; Andresen et al., 2013; Bharucha et al., 2013b; National Institute for Health and Clinical Excellence, 2015; Serra et al., 2016], there are no guidelines that specifically describe how to manage the condition in older people [International Longevity Centre-UK, 2013]. It was recognised by the consensus panel that the lack of clear advice on the best way to manage constipation in older people is a serious oversight, particularly in light of how frequently it occurs in this population and its potential to markedly impact on patient quality of life. To address the lack of guidance, this consensus statement was developed to evaluate the existing guidelines with respect to the unique challenges that the older population faces.

It was also recognised that there is an urgent need to increase awareness of constipation. Patients and health care providers alike need to know the importance of early treatment and the serious risk of complications; therefore, this consensus statement considers current approaches towards constipation treatment and proposes several methods that could be adopted to improve patient quality of life and reduce the economic burden of constipation.

METHODS

A meeting was arranged to discuss constipation in older people. European healthcare professionals were invited and a date was chosen such that the greatest number of responders could attend. A panel of six of these experts met in London in October 2015. The panel represented five European countries (Germany, Italy, the

Netherlands, Spain and the United Kingdom) and came from a variety of backgrounds (gastroenterology, nursing, geriatrics and pharmacology). Each member of the panel had significant clinical experience of treating older people with constipation. Several panel members also had a background in clinical research and guidance development. Before the meeting, attendees voted to determine the priority of discussion topics and an agenda was created. At the meeting, participants discussed, in structured form, their understanding of how constipation is addressed in their own country, their own experience of treating constipation and ways they thought that treatment could be improved. The day's discussion was summarised in a comprehensive set of minutes and these were used to compile a list of consensus points, which were approved by the meeting participants. The group also provided their most relevant local treatment guidelines and these were evaluated along with guidelines from countries not represented in the meeting. This local guidance was supplemented with the group's consensus on best practice advice based on literature and experience. The minutes, consensus points and treatment guidance were then used to prepare this manuscript. All panel members were involved in the writing, review and approval of the manuscript.

DISCUSSION

Constipation is a serious problem for older people

There is a widely held belief among the public that constipation is related to lifestyle factors such as poor diet and lack of exercise [Mihaylov et al., 2008]. As a result, the majority of people experiencing constipation will respond by changing their lifestyle as opposed to seeking pharmaceutical treatments [Wald et al., 2008]. However, there is limited evidence to suggest that lifestyle factors are always the main cause of constipation and that changing one's behaviour will alleviate constipation [Müller-

Lissner et al., 2004]. Increased fibre consumption is often recommended as a treatment for constipation and, though it is sometimes effective, there are situations where it can make constipation worse and/or cause additional discomfort to patients due to bloating, flatulence and distension [Read et al., 1995; Bosshard et al., 2004; Müller-Lissner et al., 2005]. Reduced mobility is also implicated as a cause of constipation although research suggests that it is often only one of several factors and that increasing mobility alone will not provide relief from constipation [Müller-Lissner et al., 2005]. Importantly, low mobility in older people may be the result of frailty and it may not be possible for them to exercise.

Review of Existing Guidance

Although there are no formal European-level guidelines for the treatment of constipation in older people, several countries have issued guidelines that are intended to provide advice for healthcare providers treating constipation in the general population. Much of the information from these guidelines can be applied to older people; however, it is important to consider the aging population in their own context. Below, various national guidelines are summarised with a particular emphasis on how the information pertains to older patients.

United Kingdom

The UK's National Institute for Health and Clinical Excellence (a public body that develops clinical guidelines) has issued separate clinical recommendations for the treatment of constipation in adults and children but no guidelines have yet been issued for older people [National Institute for Health and Clinical Excellence, 2015]. In the guidelines addressing constipation in adults, healthcare providers are recommended to inform patients of the importance of dietary fibre, fluid intake and exercise and to

identify any medication that the patient may be taking that could cause constipation. Patients should be reminded that defecation should be unhurried and that they should attempt to defecate soon after waking or within 30 minutes of a meal. Particularly relevant to older patients is the recommendation that people with limited mobility should have sufficient access to carers such that they can quickly respond to the urge to defecate.

Once it is established that lifestyle factors are not responsible for a patient's constipation, the recommended first-choice laxative is a bulk-forming laxative; however, the guideline specifically notes that the necessary increase in fluid intake might make this unsuitable for older people. Osmotic laxatives are the recommended alternative to bulk-forming laxative with macrogol preferred over lactulose. In the event that stools continue to be difficult to pass despite being soft, the guidelines advise that a stimulant laxative should be administered with the osmotic laxative.

During the discussions that took place as part of the development of this consensus statement, it was noted that clinical experience in the UK suggests that sodium docusate is a good first-choice laxative for initial treatment of older people. In the event that sodium docusate is ineffective, an osmotic laxative should be used with macrogol as the first choice. It was also proposed that if stools are softened by laxative treatment but are still difficult to pass, a glycerine suppository, stimulant laxative or a microlax enema should be considered in that order of preference unless rectal administration is not acceptable for the patient or carer.

The guidelines also describe a detailed approach for the treatment of impaction. In the event that the impacted stool is hard, a high, escalating dose of oral macrogol should be used. An oral stimulant laxative is recommended when this approach is found to be ineffective, or if stools were soft to begin with. If oral laxative treatment fails to

resolve impaction, suppositories (bisacodyl for soft stools and glycerol with or without bisacodyl for hard stools) or a docusate or sodium citrate enema should be considered. If these first-choice enemas do not succeed, sodium phosphate or arachis oil enemas should be used. Clinical experience in the UK has found this approach to be suitable for older people.

Germany

In Germany, a guideline on pathophysiology, diagnosis and treatment of chronic constipation in the general population was written based on a systematic literature search [Andresen et al., 2013]. Participating experts were selected by the German Society of Neurogastroenterology and Motility and the German Society for Digestive and Metabolic Diseases in cooperation with four further medical societies.

The guideline suggests that frequently cited pathophysiological factors such as a low-fibre diet, insufficient fluid intake and lack of mobility may aggravate existing constipation, but have not been proven to cause constipation; therefore, measures to correct such deficiencies are of unclear benefit. Nonetheless, patients should be advised to increase dietary fibre, aim to drink 1.5–2 L of fluid per day, maintain a level of exercise appropriate for their age and avoid habitual voluntary stool restraint. If lifestyle changes and bulk-forming laxatives like psyllium prove insufficient or intolerable, further medical therapy should be considered.

The guideline recommends macrogol, bisacodyl and sodium picosulfate as first-choice treatments. The recommended second-line treatments are anthrachinones and sugars/sugar alcohols (lactulose, lactitol, sorbitol and, depending on the individual disposition, lactose). Further possibilities are combinations of the aforementioned measures, suppositories (e.g., bisacodyl) and, as a temporary measure only, enemas.

Salinic laxatives such as magnesium hydroxide, are not recommended for chronic constipation due to possible adverse effects. Paraffin oil is not recommended due to the risk of lipid pneumonia secondary to microaspiration and disturbed absorption of lipid-soluble vitamins. Prucalopride is recommended for use only where lifestyle changes and conventional therapy have been unsatisfactory or intolerable. Where available, lubiprostone and linaclotide can be used to treat prucalopride-resistant constipation; the development of patient-specific treatment regimes is encouraged.

Opioid-induced constipation can be treated using opioid antagonists. Methylnaltrexone is mentioned but it has the disadvantage of requiring subcutaneous administration.

Further antagonists are alvimopan and oral naloxone. It should be noted that since the guideline was published, Naloxegol, a pegylated naloxone derivative, has been approved.

In addition, relevant guidelines for the treatment of constipation in a palliative care setting have been published by the Leitliniengruppe Hessen (Hesse Guidelines Group) under the auspices of Kassenärztliche Vereinigung Hessen (Hesse Association of Statutory Health Insurance Physicians) [Bergert et al., 2010]. Patients in palliative care often experience frailty, immobility, polypharmacy and decreased fibre and fluid intake. In many ways, this makes them comparable with older people from the point of view of constipation and its treatment. The guidelines recommend that the first stage of treatment should involve an increase in fibre, fluids and exercise. However, if these lifestyle changes are difficult to make because of a patient's condition, therapeutic intervention is recommended. In the first instance, therapies based on macrogol with electrolytes are advised because they rarely cause bloating and they maintain electrolyte balance. In the event of a hardened stool, stimulant laxatives with the possible addition of lubricants should be used with manual removal considered a

last resort. For patients who cannot swallow, rectal administration of bisacodyl or glycerol is recommended.

Italy

The Italian Association of Hospital Gastroenterologists and the Italian Society of Colo-Rectal Surgery published an evidence-based consensus statement on the diagnosis and treatment of chronic constipation and obstructed defecation in adults [Bove et al., 2012]. The authors found no evidence that constipation can be effectively treated by increasing physical exercise and improving defecation habits; increased fluid intake is recommended only if a patient is dehydrated. The guideline awards the highest grade of recommendation (grade A) to macrogol, tegaserod and prucalopride. Psyllium, lactulose, lubiprostone and linaclotide receive a Grade B recommendation.

Experience from Italy suggests that treatment of older people with constipation should begin with a thorough review of the patient's medications. If any constipation-causing medications are identified, the aim is to replace them with alternate therapies where possible. If this is not possible or fails to resolve the constipation, patients who are consuming less than 30 g of soluble fibre per day should aim to increase their intake to this level gradually. In addition, patients should be educated on recognising and responding to the urge to defecate and, in order to benefit most from the gastrocolic reflex, visits to the toilet should be routinely scheduled soon after waking and after meals. Elevating the feet with a foot stool and, if possible, abdominal and pelvic floor muscle-strengthening exercises may provide additional help with defecation [Lacy et al., 2016].

It is generally considered that when patients fail to respond to fibre supplementation, osmotic laxatives such as macrogol should be used, with the dose titrated until a

clinical response is achieved. Syrup-based formulations are particularly well tolerated by dysphagic patients. In patients with more refractory constipation, stimulant laxatives (bisacodyl, senna) and prokinetic agents (prucalopride 1 mg/day) or secretagogue drugs (such as linaclotide, which improves intestinal transit and abdominal pain) should be used, if necessary in conjunction with osmotic laxatives. In patients with pelvic floor dysfunction, periodic hydrocolontherapy or once- or twice-weekly enemas are considered effective. Where patients have no cognitive impairment and demonstrate ano-rectal muscular integrity, biofeedback therapy can be effective in patients with pelvic floor dysfunction or faecal incontinence.

For residents of nursing homes, a daily stool diary should be maintained with a record of stool profile as described by the Bristol stool scale. It is important for the nurses who have daily contact with patients to coordinate their activities with attending physicians, especially in residents who are not able to report symptoms. Attention from a dietician may also be beneficial. Macrogol should be used as the first-line therapeutic intervention with dose titrated according to patient response. After three days without a bowel movement, a rectal exam should be conducted followed by a tap water enema. A combination of osmotic laxatives with stimulant or prokinetic laxatives (bisacodyl/senna or prucalopride) is also considered to be effective in nursing home residents suffering with constipation. A technical aid in the management of constipation that has been shown to have some effect in older people is an abdominal massage, which can increase the frequency of bowel movements and decrease discomfort in patients with constipation (Sinclair, 2011).

The Netherlands

Dutch guidelines have been issued by the Nederlands Huisartsen Genootschap (Dutch College of General Practitioners) for the treatment of constipation in the general

population [Nederlands Huisartsen Genootschap, 2010]. The guidelines recommend lactulose or macrogol as first-line treatments and note that macrogol with electrolytes is as effective as macrogol without electrolytes. Macrogol with electrolytes is recommended for treating faecal impaction. If a patient does not tolerate a treatment – for example, they experience bloating or dislike the taste – the health care professional should select another treatment.

Spain

Spanish guidelines for the treatment of constipation in the general population were developed using an evidence-based approach and released in 2016 [Serra et al., 2016]. The guideline recommends that after drug-related or medical causes of constipation have been ruled out, patients should be encouraged to increase consumption of soluble fibre and fluids and take regular exercise. If this is not possible or is ineffective, osmotic laxatives are recommended as the first line treatment with the guidelines noting the stronger evidence base for the use of macrogol over lactulose. Stimulant laxatives should be used as a rescue medication for non responders. When laxatives fail to produce a satisfactory relief of symptoms, prucalopride is recommended as an alternative. A functional study by a gastroenterologist should take place if none of these treatments is effective. Clinical experience in Spain indicates that these general guidelines would be suitable for the treatment of older patients.

France

In France, general treatment guidelines have been issued by the Société Française de Gastroentérologie (French Society of Gastroenterology) [Piche et al., 2007]. The authors took a systematic, evidence-based approach, which considered 722 different articles. The guidelines recommend that the first step of any treatment should be for

healthcare professionals to remind patients of the importance of maintaining regular toilet habits and to establish that patients are allowing sufficient time for bowel movements and that they have enough privacy. The guidelines also cite a study in older people reporting that the use of a footstool while on the toilet improves stool movement of through the anal canal. The guidelines do not find sufficient supporting evidence for them to recommend increased hydration and increased physical activity. A gradual increase of dietary fibre intake is suggested although the guidelines mention that it may only have a modest impact.

The first-line therapeutic interventions recommended by the guidelines are osmotic laxatives (macrogol, lactulose or milk of magnesia) and bulk-forming laxatives (psyllium, ispaghula, sterculia gum and bran). No single laxative is identified as a first-choice treatment. Stool softeners are recommended as a second-line treatment although the guidelines note the propensity of mineral oils to increase the risk of faecal incontinence and anal seepage, and the possibility that they may leech lipid-soluble vitamins A, D, E and K. The guidelines also mention that elderly patients may be at risk of complications caused by choking on orally administered oils. Stimulant laxatives are recommended for use only when other treatment options have failed; however, their usefulness in especially frail elderly patients is noted. For certain older patients or patients with neurological diseases suppositories and enemas are proposed.

Canada

A Canadian consensus group was assembled to evaluate the literature and produced a statement on the treatment of constipation in a general population [Paré et al., 2007]. The group concluded that there was insufficient evidence to support increased fluid intake and increased exercise to relieve constipation although they supported the use of increased fibre intake. It is noted, however, that older patients may already have

especially low fluid intake and that this should be increased. Unsurprisingly, given that both guidelines were based on a comprehensive review of clinical trial data, the conclusions of the panel were similar to those of the Société Française de Gastroentérologie [Piche et al., 2007]. Initially, it is recommended that patients are educated on bowel function followed by a gradual increase in dietary fibre. Should this be ineffective, osmotic laxatives are recommended followed by glycerine-based suppositories if necessary. A specific osmotic laxative is not recommended although the guidelines note that milk of magnesia is cheaper than macrogol. However, the guidelines also highlight the gas-producing effect of lactulose and the fact that there have been no long-term studies of the effectiveness of lactulose or milk of magnesia.

USA

The American Gastroenterological Association has also published a set of guidelines for the treatment of constipation in the general population [Bharucha et al., 2013b]. In common with several other guidelines, they recommend increased fibre as the initial treatment. As a first line treatment, they recommend an inexpensive osmotic agent with milk of magnesia and macrogols given as examples.

Summary of local guidance

Figure 1 shows a simple treatment flowchart based on the local guidelines discussed above.

Osmotic laxatives are considered to be the most effective treatment in the general population [Gandell et al., 2013] and this is reflected by their recommendation as a first-choice laxative in general treatment guidelines in Germany [Bergert et al., 2010; Andresen et al., 2013], Netherlands [Nederlands Huisartsen Genootschap, 2010], Spain [Serra et al., 2016], France [Piche et al., 2007], Canada [Paré et al., 2007] and

the USA [Bharucha et al., 2013b]. In contrast, the UK's National Institute of Clinical Excellence guidelines recommend bulk-forming laxatives over osmotic laxatives although they note that the increased fluid intake required by patients receiving bulk-forming laxatives may make them unsuitable for older people [National Institute for Health and Clinical Excellence, 2015]. Several clinical trials have demonstrated the effectiveness of osmotic laxatives in this population. For example, lactulose has been shown to reduce constipation-associated symptoms in older people [Wesselius-De Casparis et al., 1968; Sanders, 1978] and the clinical effectiveness of macrogol with electrolytes has been demonstrated in older people with Parkinson's disease [Zangaglia et al., 2007].

The relative effectiveness of lactulose and macrogol in the general population was recently evaluated in a Cochrane review [Lee-Robichaud et al., 2010]. The review considered data from 10 clinical trials and concluded that, overall, macrogol increased stool frequency and improved stool form. As well as the clearer efficacy of macrogol over lactulose, there are also reports of bloating and flatulence when lactulose is metabolised by gut flora – something that impacts on treatment tolerability and patient quality of life [Attar et al., 1999].

Awareness of constipation

The perception that chronic constipation is not in itself a treatable medical condition leads to under-reporting and this is compounded by the fact that many older people consider bowel health a private matter and find it difficult to discuss [Norton, 2006]. Consequently, many patients resort to self-medication [De Lillo et al., 2000; Dennison et al., 2005] and therefore do not benefit from the expertise of healthcare professionals.

In order to circumvent the self-imposed social stigma associated with constipation, the authors recommend that healthcare providers should proactively identify patients with constipation who are not receiving appropriate treatment. In older patients, this could be addressed by asking few short questions at routine health visits that would allow healthcare providers to determine if any treatment is required. The questions could be as simple as “are you happy with your bowels?”, “how long do you spend on the toilet?”, “do you ever need to strain on the toilet?”, “how frequent are your bowel movements?”, “do you use any medication for your bowel?”. Alternatively, questions that are more general could be asked such as “do you have any problems with your bowels?” or “do bowel symptoms prevent your enjoyment of any part of life?”.

Introducing patients to the Bristol stool scale may also assist in the discovery of undiagnosed constipation. Where a healthcare provider thinks that a patient might be constipated, they can ask further questions and decide on an appropriate intervention.

To encourage patients who self-medicate to seek professional advice, a partnership with pharmacists would be useful. For example, when a patient buys an over-the-counter constipation treatment, the pharmacist should ask a simple question such as “how long have you been using this?”. If the answer is longer than 3 months, the pharmacist should recommend an alternative treatment or encourage the patient to seek further advice from a healthcare provider.

One final group of older people with constipation who may prove difficult to identify are older people with communication difficulties [Tracey, 2000]. In the opinion of the authors, stool diaries and digital rectal examination could be used with the goal of identifying constipation before patients require treatment for impaction. As discussed above, preventing impaction is likely to reduce the occurrence of faecal incontinence; this is important on many levels because it can have a substantial negative impact on the dignity of patients and increases the workload of nursing home staff.

To better emphasise the need for proactive identification of patients suffering with constipation, the economic aspects of constipation need to be thoroughly considered. Only through the collection and reporting of robust patient outcome data will it be possible to encourage general practitioners to think in terms of long-term secondary care costs instead of short-term prescribing costs. To date, there has been almost no research into the secondary care costs of untreated constipation although a report by the company Coloplast determined that constipation cost UK hospitals £145 million (€179 million) in 2014/15 [Coloplast, 2016]. Some research has reported on the estimated economic value of macrogol over lactulose [Christie et al., 2002; Guest et al., 2008] but the research only considers the basic cost of the treatments and does not evaluate the cost of secondary care that can arise from complications.

Potential benefits of the consensus statement

The principle aim of this consensus statement was to evaluate the current guidance on the treatment of constipation and assess its applicability to an older population. This combined advice is intended to improve patient care and reduce the likelihood of complications such as faecal impaction. It can also be anticipated that patients who are successfully treated will be encouraged to seek treatment for similar problems in the future and will therefore have improved bowel health for their entire lives.

The authors seek to reemphasise the serious nature of constipation and address the reasons it continues to go undetected and untreated. It needs to be emphasised that patients can be reluctant to discuss bowel problems and that it is up to healthcare professionals to identify proactively those patients who are unsuccessfully self-medicating or who do not realise they have a problem. By increasing awareness of the personal, social and economic costs of constipation, it is envisaged that a greater number of constipated patients will receive the attention they need and be treated

appropriately. It is likely that this will reduce the number of patients requiring expensive secondary care. Public awareness of bowel issues needs to be increased; in short, people need to know that they can be happy with their bowels. They also need to know that acute episodes of constipation can be addressed with the help of healthcare professionals before the secondary consequences of untreated constipation impact on health and well-being. By raising these issues in this consensus statement, it is hoped that the relevant authorities will be encouraged to reach out to older patients suffering with constipation and let them know that support is available.

CONCLUSIONS

The bowel health of older people has the potential to have a marked impact on their overall quality of life; unfortunately, it is something that many people are uncomfortable discussing. For this reason, constipation often goes untreated, which increases the risk of impaction and incontinence. This consensus statement provides treatment guidance for older people, which is itself derived from general evidence-based treatment guidelines that have been produced by respected national authorities. Furthermore, it draws attention to the social and economic importance of effective constipation treatment and includes suggestions for healthcare providers to identify patients who are unsuccessfully self-medicating or not seeking treatment. It is hoped that this consensus statement will serve to focus attention on the opportunity to improve the quality of life of patients and reduce the economic burden of constipation across Europe. The present document underlines the current issues and how the healthcare community is failing older people. The authors hope that this work will serve as a ‘call to arms’ to those working with older people to develop guidelines, especially where they do not already exist, that address the challenges posed by the condition.

AUTHOR CONTRIBUTIONS

AE, FMR, MCN, KUP, ER and JR attended the consensus meeting and contributed to writing and critical review of the manuscript. JR chaired the meeting.

ACKNOWLEDGEMENTS

Funding for this project was provided by an unrestricted educational grant from Norgine Pharmaceuticals Limited. Medical writing assistance was provided by Dr James Serginson of Niche Science & Technology Limited and was paid for by Norgine Pharmaceuticals Limited.

REFERENCES

- Andresen V, Layer P, German Society for Digestive and Metabolic Diseases; German Society for Neurogastroenterology and motility; German Society for Internal Medicine. *Z Gastroenterol* 2013;51:1199–1201. In German.
- Attar A, Lémann M, Ferguson A et al. Comparison of a low dose polyethylene glycol electrolyte solution with lactulose for treatment of chronic constipation. *Gut* 1999;44:226–230.
- Belsey J, Greenfield S, Candy D, Geraints M. Systematic review: impact of constipation on quality of life in adults and children. *Aliment Pharmacol Ther* 2010;31:938–949.
- Bergert FW, Braun M, Clarius H, et al. Hausärztliche Leitlinie Palliativversorgung [Practice Guideline for Palliative Care]. 2010. Available from http://www.pmvforschungsguppe.de/pdf/03_publicationen/palliativ_II.pdf. [accessed 29 January 2015]. In German.
- a. Bharucha AE, Pemberton JH, Locke GR. American Gastroenterological Association Technical Review on Constipation. *Gastroenterology* 2013;144:218–238.
- b. Bharucha AE, Dorn SD, Lembo A, Pressman A. American Gastroenterological Association Medical Position Statement on Constipation. *Gastroenterology* 2013;144:211–217.
- Bosshard W, Dreher R, Schnegg J-F, Büla CJ. The Treatment of Chronic Constipation in Elderly People: An Update. *Drugs Aging* 2004;21:911–930.
- Bove A, Bellini M, Battaglia E et al. Consensus statement AIGO/SICCR diagnosis and treatment of chronic constipation and obstructed defecation (Part II: Treatment). *World J Gastroenterol* 2012;18:4994–5013.

Cardin F, Minicuci N, Droghi AT, Inelmen EM, Sergi G, Terranova O. Constipation in the acutely hospitalized older patients. *Arch Gerontol Geriatr* 2010;50:277–281.

Chassagne P, Jegou A, Gloc P, et al. Does treatment of constipation improve faecal incontinence in institutionalized elderly patients? *Age Aging* 2000;29:159–164.

Chatoor D, Emmanuel A. Constipation and evacuation disorders. *Best Pract Res Clin Gastroenterol* 2009;23:517–530.

Christie AH, Clubert P, Guest JF. Economic Impact of Low Dose Polyethylene Glycol 3350 Plus Electrolytes Compared with lactulose in the Management of Idiopathic Constipation in the UK. *Pharmacoeconomics* 2002;20:49–60.

Coloplast. The Cost of Constipation Report. 2016. Available from:

http://www.coloplast.co.uk/Global/UK/Continence/Cost_of_Constipation_Report_FI_NAL.pdf [accessed 25 May 2016].

De Lillo AR, Rose S. Functional Bowel Disorders in the Geriatric Patient: Constipation, Fecal Impaction, and Fecal Incontinence. *Am J Gastroenterol* 2000;95:901–905.

Dennison C, Prasad M, Lloyd A, Bhattacharyya SK, Dhawan R, Coyne K. The Health-Related Quality of Life and Economic Burden of Constipation. *Pharmacoeconomics* 2005;23:467–476.

Department of Health (UK). Reference Costs 2014-15. 2015. Available from:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/477919/2014-15_Reference_costs_publication.pdf [accessed 29 January 2015].

Gallagher P, O'Mahony D. Constipation in old age. *Best Pract Res Clin Gastroenterol* 2009;23:875–887.

Gallagher PF, O'Mahoney D, Quigley EMM. Management of Chronic Constipation in the Elderly. *Drugs Aging* 2008;25:807–821.

Gandell D, Straus SE, Bundookwala M, Tsui V, Alibhai SMH. Treatment of Constipation in Older People. *CMAJ* 2013;185:663–670.

Guest JF, Clegg JP, Helter MT. Cost-effectiveness of macrogol 4000 compared to lactulose in the treatment of chronic functional constipation in the UK. *Curr Med Res Opin* 2008;24:1841–1852.

a. Health and Social Care Information Centre. Hospital Episode Statistics: Admitted Patient Care, England 2013–14: Diagnosis. 2015. Available from:

<http://www.hscic.gov.uk/catalogue/PUB16719> [accessed 29 January 2016].

b. Health and Social Care Information Centre. Hospital Episode Statistics: Admitted Patient Care, England 2013–14: Procedures and Interventions. 2015. Available from:

<http://www.hscic.gov.uk/catalogue/PUB16719> [accessed 29 January 2016].

Herz MJ, Kahan E, Zalevski S, Aframian R, Kuznitz D, Reichman S. Constipation: a different entity for patients and doctors. *Fam Pract* 1996;13:156–159.

International Longevity Centre-UK. The Burden of Constipation in our Ageing Population. 2013. Available from:

http://www.ilcuk.org.uk/images/uploads/publication-pdfs/Burden_of_constipation_report.pdf [accessed 02 December 2015].

Kinnunen O. Study of constipation in a geriatric hospital, day hospital, old people's home and at home. *Aging* 1991;3:161–170.

Lacy BE, Mearin F, Chang L, Chey WD, Lembo AJ, Simren M, Spiller R. Bowel Disorders. *Gastroenterology* 2016;150:1393–1407.

Lee-Robichaud H, Thomas K, Morgan J, Nelson RL. Lactulose versus Polyethylene Glycol for Chronic Constipation (Review). *Cochrane Database Syst Rev* 2010;7:CD007570.

Longstreth GF, Thompson WG, Chey WD, Houghton LA, Mearin F, Spiller RC. Functional Bowel Disorders. *Gastroenterology* 2006;130:1480–1491.

Mihaylov S, Stark C, McColl E, et al. Stepped treatment of older adults on laxatives. The STOOL trial. *Health Technol Assess* 2008;12:ix–139.

Müller-Lissner SA, Kamm MA, Scarpignato C, Wald A. Myths and Misconceptions About Chronic Constipation. *Am J Gastroenterol* 2005;100:232–242.

National Institute for Health and Clinical Excellence. Constipation Clinical Knowledge Summary. 2015. Available from: <http://cks.nice.org.uk/constipation> [accessed 02 December 2015].

Nederlands Huisartsen Genootschap. Standaard Obstipatie [Standard Constipation]. 2010. Available from: <https://www.nhg.org/standaarden/volledig/nhg-standaard-obstipatie> [accessed 23 May 2016]

Nelson R, Furner S, Jesudason V. Fecal Incontinence in Wisconsin Nursing Homes. *Dis Colon Rectum* 1998;41:1226–1229.

Norton C. Constipation in older patients: effects on quality of life. *Br. J. Nurs* 2006;15:188–192.

Paré P, Bridges R, Champion MC, et al. Recommendations on chronic constipation (including constipation associated with irritable bowel syndrome) treatment. *Can J Gastroenterol* 2007;21:3B–22B.

Piche T, Dapoigny M, Bouteloup C, et al. Recommandations pour la pratique clinique dans la prise en charge et le traitement de la constipation chronique de l'adulte [Recommendations for clinical practice in the care and treatment of chronic constipation in adults]. *Gastroenterol Clin Biol* 2007;31:125–135. In French.

Read NW, Celik AF, Katsinelos P. Constipation and Incontinence in the Elderly. *J Clin Gastroenterol* 1995;20:61–70.

Rey E, Barcelo M, Jiménez Cebrián MJ, Alvarez-Sanchez A, Diaz-Rubio M, Rocha AL. A nation-wide study of prevalence and risk factors for fecal impaction in nursing homes. *PLoS One* 2014;9:e105281.

Roque MV, Bouras EP. Epidemiology and management of chronic constipation in elderly patients. *Clin Interv Aging* 2015;10:919–930.

Sanders JF. Lactulose Syrup Assessed in a Double-Blind Study of Elderly Constipated Patients. *J Am Geriatr Soc* 1978;26:236–239.

Serra J, Mascort-Roca J, Marzo-Castillejo M, Aros SD, Ferrándiz Santos J, Rey Diaz Rubio E, Mearin Manrique F.. Guía de práctica clínica sobre el manejo del estreñimiento crónico en el paciente adulto. Parte 2: Diagnóstico y tratamiento [Clinical practice guidelines for the management of constipation in adults. Part 2: Diagnosis and treatment]. *Gastroenterol Hepatol* 2016. doi: 10.1016/j.gastrohep.2016.02.007. [Epub ahead of print]. In Spanish.

Serrano Falcón B, Barceló López M, Mateos Muñoz B, Álvarez Sánchez A, Rey E. Fecal impaction: a systematic review of its medical complications. *BMC Geriatr* 2016;16:4.

Sinclair M. The use of abdominal massage to treat chronic constipation. *J Bodyw Mov Ther* 2011;15:436–445.

Tracey J. Fecal Impaction: Not Always a Benign Condition. *J Clin Gastroenterol* 2000;30:228–229.

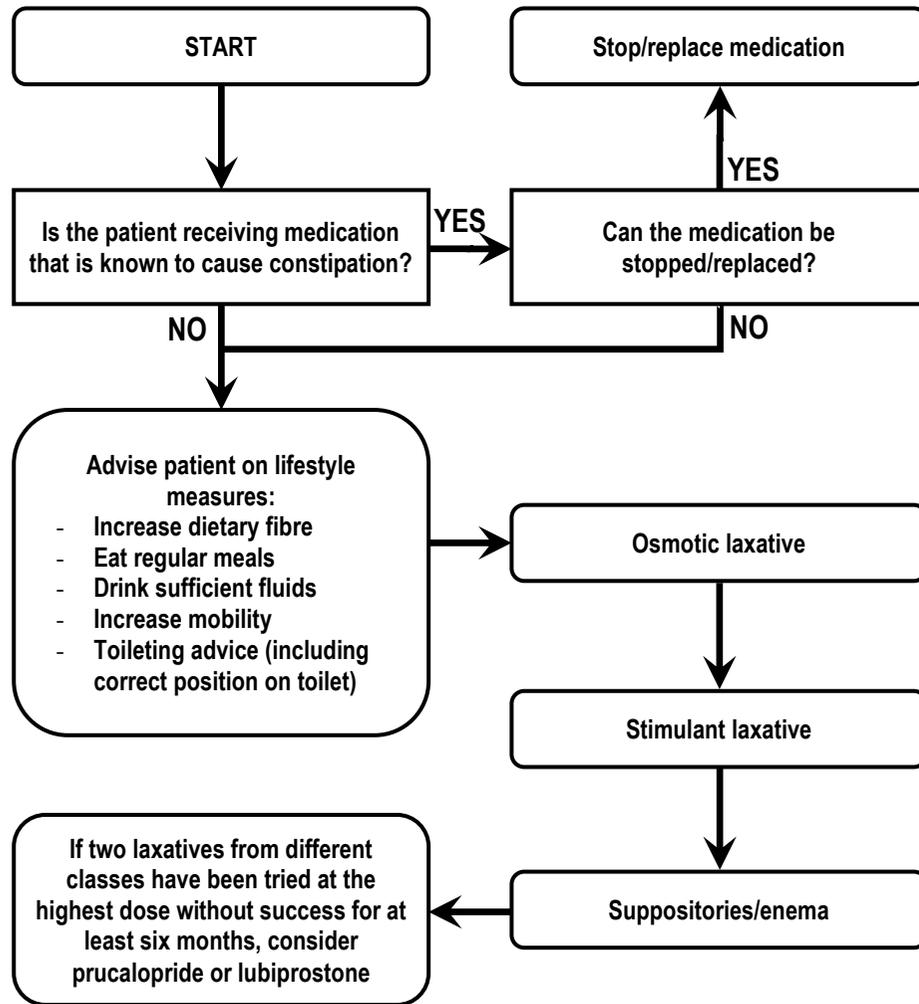
Wald A, Scarpignato C, Müller-Lissner S et al. A multinational survey of prevalence and patterns of laxative use among adults with self-defined constipation. *Aliment Pharmacol Ther* 2008;28:917–930.

Wesselius-De Casparis A, Braadbaart S, van der Bergh-Bohlken GE, Mimica M. Treatment of chronic constipation with lactulose syrup: results of a double-blind study. *Gut* 1968;9:84–86.

Wilson LA. Understanding bowel problems in older people: Part 1. *Nursing Older People* 2005;17:24–29.

Zangaglia R, Martignoni E, Glorioso M, et al. Macrogol for the Treatment of Constipation in Parkinson's Disease. A Randomized Placebo-Controlled Study. *Mov Disord* 2007;22:1239–1244

Figure 1 Treatment of Constipation



If an effective treatment is found, adjust dose as necessary and repeat treatment as required. Consider withdrawal if patients regularly produce soft, formed stools. Withdrawal should take place after 2–4 weeks of normal passage of stool. Withdrawal should not be sudden and may take several months. For drug-induced constipation, continue for as long as constipating drug is used

Specific treatment scenarios

