Management of the clinical issue of constipation with abdominal complaints in adults. A national survey of Primary Care physicians and gastroenterologists

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ABSTRACT

Irritable bowel syndrome and functional constipation represent a relevant and common health issue. However, real-world clinical practice includes patients with constipation who may or may not have other abdominal complaints (pain, bloating, abdominal discomfort) with variable frequency. The goal of the present study was to obtain information on the workload entailed by patients with constipation and associated abdominal complaints, predominant clinical behaviors, education needs, and potential daily practice aids both in Primary Care and gastroenterology settings. The clinical behavior of doctors is generally similar at both levels, despite differences in healthcare approach: use of empiric therapies and clinically guided diagnostic tests, with some differences in colonoscopy use (not always directly accessible from Primary Care). Regarding perceptions, general support and osmotic laxatives are most valued by PC doctors, whereas osmotic laxatives, combined laxatives, and linaclotide are most valued by GE specialists. Furthermore, over half of respondents considered differentiating both diagnoses as challenging. A strength of this study is providing a joint photograph of the medical approach and the perceptions of constipation with abdominal discomfort from a medical standpoint. Weaknesses include self-declaration (no formal validation) and a response rate potentially biased by professional motivation.


INTRODUCTION

Irritable bowel syndrome (IBS) and functional constipation (FC) represent a common health issue for all societies (1,2). In Spain, their estimated prevalence is 8% and 16%, respectively (3), with approximately 40% seeking care (4), which represents a considerable daily workload for both gastroenterology (GE) and Primary Care (PC) physicians. However, the clinical approach is considerably hindered by the conditions’ concepts and definitions themselves (by expert consensus) (5), the absence of specific diagnostic markers, and the absence of highly effective therapies (6).

These factors influence the diagnostic-therapeutic approach to these problems by each individual clinician. Clinical guidelines represent an effort by the scientific community to provide a consistent diagnostic and therapeutic behavior based on evidence (7); however, regarding IBS, clinical practice often remains far removed from such guidelines, as has been acknowledged in many countries (8,9). In Spain, two studies focusing on IBS showed this clinical practice variability (10,11), which has also been acknowledged in other countries and even between countries (12).

Most surveys on clinical behavior focus on disease; as regards functional disorders, the frontier separating some specific diagnoses is blurred, and even the use of specific diagnostics varies (13). Regarding IBS with predominant constipation (IBS-C) and FC, a separating frontier is hardly discernible (3). In this specific setting, the clinical reality physicians (whether GE or PC) must face includes patients with constipation that may or may not be accompanied by other abdominal complaints (pain, bloating, abdominal discomfort) with a variable frequency. Physician opinions and actions attempt to approach the patient’s complaints; diagnosis is simply a result. Therefore, from a practical perspective, awareness of clinical actions to solve a clinical problem is more relevant than awareness of behaviors according to diagnosis.
Therefore, the goal of the study was to obtain information on the workload patients with constipation and associated abdominal complaints represent, on the predominant clinical behaviors, on education needs, and on the potential aids to clinical practice both in PC and GE settings.

MATERIAL AND METHODS

The method used to reach this goal was a survey of PC and GE clinicians. This survey, by the name of “Gestiona SII-EE/EF”, was performed using an ad hoc questionnaire that was developed prior to fieldwork activities.

Questionnaire development

A work group was formed for the development of the questionnaire, which included a member from each one of the scientific societies involved (a GE specialist and three PC specialists), as well as a knowledge manager and a methodologist/epidemiologist. This group developed a list of items to be explored, which resulted in an initial version of the questionnaire, including 24 baseline questions later revised in two discussion meetings; a final version emerged that included six common items followed by 26 items intended for PC doctors and 24 items intended for GE specialists. This final version was subjected to an external review by expert teams designated by each society, and to assessment by a group of five GE specialists and five PC clinicians who validated its applicability and understandability. Finally, the definitive questionnaire that resulted from this external review was piloted on a sample of 20 professionals (GE and PC) using the mechanized survey in the format provided for completion.

Questionnaire

The definitive questionnaire included in the survey consists of six general items for all potential respondents (demography, scientific society membership, specialty) and two subsets, one for PC and one for GE physicians, respectively. This questionnaire included items on:

- **General background**: professional experience, city of practice, work setting characteristics.
- **Workload**: number of patients seen per month, number of patients with constipation and abdominal complaints, prior IBS diagnosis status.
- **Clinical behavior**: frequency with which diagnostic tests are ordered, use of specific criteria for colonoscopy orders, empiric therapies, diagnostic description in the medical records, follow-up, use of decision algorithms; the PC subset includes items to elicit whether colonoscopy could be directly ordered, and the proportion of patients referred to GE clinicians.
- **Clinical perceptions**: degree of satisfaction with available therapies, differentiation between IBS-C and FC.
- **Clinical aids**: perceived usefulness of having diagnostic-therapeutic guidelines, local protocols, or informative materials for patients available.
- **Training**: training received in the past three years and usual education sources, self-perceived educational needs, preferences regarding education sources.

Survey

The survey was administered online using the SurveyMonkey software with four different collectors (one from each society involved). The target GE population included practising specialists registered as SEPD members (2,027). The target PC population was approached via semFYC, SEMERGEN, and SEMG databases (total of 12,830). All of them received an emailed invitation with a presentation text discussing the survey goals and a link, either individual (GE) or society-specific (PC). These e-mails were sent in three waves, and the link included an initial identification question in order to recognize duplicates at the time of analysis.

Statistical analysis

Quantitative variables were described using central tendency and dispersion statistics (mean, standard deviation), whereas qualitative variables were described using absolute and relative frequencies (%). In the inferential analysis (subgroups according to setting, location, personal and professional characteristics), the Chi-squared test (Fisher’s exact test) was used for qualitative variables and Student’s t-test, ANOVA, or non-parametric tests (Mann Whitney U-test, Kruskall-Wallis) were used for quantitative variables. Statistical significance was set at p < 0.05 in all cases. The analyses were performed using the PASW 18.0 (SPSS Inc) software.

RESULTS

Sample description

From the participating PC doctors, 934 partially or totally completed questionnaires were collected (response rate 7.28%, homogeneous distribution among autonomous communities); respondents claimed to be members of semFYC (555: 59.4%), SEMERGEN (251: 26.9%) and SEMG (188: 20.1%); memberships in more than one society were common (177: 19.0%); only 56 (6.0%) recorded no membership. A total of 67.9% acknowledged more than 10 years’ experience. Mean age was 45.3 years (SD 12.2 years; range: 25-79 years), and 57.5% were males. Of these, 45.1% had less than 10 years’ experience, and 30.8% had more than 20 years of professional experience. Among PC doctors, 79.4% acknowledged being members of SEPD. Mean age was 43.3 (SD 12.2 years; range: 25-79 years), and 57.5% were males. Of these, 45.1% had less than 10 years’ experience, and 30.8%
had more than 20 years’ experience. Autonomous communities with more respondents included Andalucía (21.6%), Madrid (15.4%), Valencia (11.7%), Castile-La Mancha (7.7%), and Catalonia (7.3%). In all, 85.3% worked in urban areas (more than 50,000 inhabitants).

Workload and clinical behavior

PC physicians declared that, among their median number of patients cared-for monthly (600; IQR 450-800), 15 (2.5%) had constipation and abdominal complaints; 15 (2.5%) had constipation with no abdominal complaints; and 5 (0.8%) had or received a diagnosis of IBS with predominant constipation (IBS-C). The median proportion of referrals to GE specialists was 10% (IQR 5-25%), with high heterogeneity among autonomous communities. Most PC doctors ordered diagnostic tests only on occasion (Table I). Lab tests were most common among PC respondents; 60% ordered basic complete blood count (CBC) and blood panels, and 55.5% ordered a thyroid panel for more than half of their patients with said presentations. Among PC respondents, 21.6% ordered colonoscopy for half or more of their patients with said presentations. When PC doctors allowed to order colonoscopy directly for more than half of their patients with said presentations. In all, 26.9% ordered ultrasounds for half or more of their patients with this problem, and 56.2% claimed to do so on occasion. Other diagnostic tests such as gastroscopy, plain abdominal X-rays, and opaque enema were rarely ordered, only for a few patients or never by 93%, 83.1% and 95.6% of PC respondents, respectively. When PC doctors allowed to order colonoscopy directly are compared to those who cannot (Table II), the proportion ordering this procedure for half or more of their patients is higher among the former (26.5% vs. 13.3%); differences in orders regarding other tests are small, although statistically significant. Among PC respondents, 84.9% initiated treatment with no prior studies, and 15.1% did perform prior studies. In case of therapy failure, among PC doctors usually initiating empiric measures, 48.5% changed therapies and started a checkup for the condition; 31.5% considered failure as a criterion for checkup; 17.6% maintained the ongoing therapy and started a checkup; and only 2.5% initiated another empiric measure. Figure 1 summarizes the clinical behaviors acknowledged by PC physicians.

Guidelines with diagnostic-therapeutic algorithms are used by 63% of respondents; most rely on national guidelines (48%) or on guidelines issued by their own institution (22.1%); 32.8% of respondents report that they use no guidelines and act according to the needs of each individual patient. Of 765 PC practitioners who responded to the guidelines item, 667 (88.5%) knew at least one set of clinical practice guidelines. Only 88 (11.5%) knew no guidelines. The most widely known (85%), used (76.2%) and considered as useful for clinical practice (83.4% considered it to be quite or very useful) by PC practitioners was the Guía on IBS issued by AEG (Asociación Española de Gastroenterología) – semFYC - Centro Cochrane Iberoamericano in 2005 (14). The NICE Guidelines of 2015 (15), particularly designed for PC use, was only known by 34.6% and used by 53.4% of them; it was deemed quite useful by 81.7% of the latter. Fewer than 30% claimed knowledge of other listed guidelines (AGA [16], ACG [17]), and the use of other articles or manuals was anecdotal.

GE specialists reported that they cared for a median of 160 patients monthly (IQR 100-280), and pointed out that a median of 35 (21.9% of the median total of patients cared for) visited for constipation and abdominal discomfort, a proportion that rises to 30% when the median 15 additional patients diagnosed with IBS-C are included.

Most GE specialists ordered diagnostic tests (Table III). Blood tests were most commonly ordered by respondents; 84.2% said they ordered CBC and routine blood tests, and 81.8% a thyroid panel, for half or more of patients with these complaints. In all, 63.3% of GE specialists said that they ordered colonoscopy for at least half of their patients, whereas only 0.7% reported that they never ordered this test; 49.4% said they ordered ultrasounds for at least half of their patients with this problem, and 43.6% said they did so at times. Other complementary tests, including gastroesophageal reflux disease (GERD), endoscopies, and CT scans were occasionally ordered by only a few institutions. Figure 2 summarizes the clinical behaviors acknowledged by GE physicians.

Table I. Diagnostic tests ordered by PC physicians

<table>
<thead>
<tr>
<th>Test</th>
<th>Never</th>
<th>Sometimes</th>
<th>Half of the times</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood test (CBC and basic biochemistry panel)</td>
<td>28</td>
<td>3.0%</td>
<td>341</td>
<td>36.5%</td>
<td>151</td>
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<tr>
<td>Thyroid hormones</td>
<td>71</td>
<td>7.6%</td>
<td>345</td>
<td>36.9%</td>
<td>151</td>
</tr>
<tr>
<td>Gastroscopy</td>
<td>364</td>
<td>39.0%</td>
<td>504</td>
<td>54.0%</td>
<td>51</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>186</td>
<td>19.9%</td>
<td>546</td>
<td>58.5%</td>
<td>130</td>
</tr>
<tr>
<td>Abdominal ultrasounds</td>
<td>64</td>
<td>6.9%</td>
<td>525</td>
<td>56.2%</td>
<td>200</td>
</tr>
<tr>
<td>Plain abdominal X-rays</td>
<td>242</td>
<td>25.9%</td>
<td>441</td>
<td>47.2%</td>
<td>119</td>
</tr>
<tr>
<td>Opaque enema</td>
<td>586</td>
<td>62.7%</td>
<td>307</td>
<td>32.9%</td>
<td>30</td>
</tr>
</tbody>
</table>
copy, plain abdominal X-rays or opaque enema, are only ordered rarely; they are ordered rarely or never by 82%, 87.1% and 93.1% of respondents, respectively.

Most respondents used some clinical criterion as indication when ordering a colonoscopy. Most commonly used criteria in this regard include age and/or alarm signs, which account for 51.6% of responses.

Therapy is initiated without prior testing (empirically) by 68.5% of GE specialists, versus 31.5% who used a previous checkup. When therapy failed, of the respondents who used empiric therapy 64.1% usually changed treatments and started a checkup, 19% considered this as a criterion for ordering a checkup, 10.3% maintained their therapy and started a study of symptoms, and only 6.6% initiated another empiric therapy. In 56% of cases patients are referred to PC for follow-up. Figure 1 summarizes the answers obtained.

Among GE specialists, 73.3% used guidelines with diagnostic-therapeutic algorithms; most allegedly relied on national guidelines (53.8%) or international guidelines (42.9%); 26.7% of respondents said they used no guidelines and based their decision-making on the needs of each individual patient. Of all the listed guidelines for IBS, most respondents (83-93%) were familiar with those related to their specialty: AGA (89.8%) and ACG (83.9%) of 2014, and the set issued by AEG - semFYC - Centro Cochrane Iberoamericano (93.2%) of 2005; these latter guidelines were most widely used and best rated in terms of clinical usefulness.

**Perceptions**

The perceptions regarding the use of (Fig. 2) and satisfaction with (Table IV) therapies showed some differences between PC and GE settings. As regards the use of the various therapeutic options suggested, GE physicians clearly used predominantly second-line (prucalopride, linaclotide) or third-line (antidepressants) measures, as well as combinations. Regarding satisfaction with the different therapy options, PC practitioners were satisfied with the results obtained with general support and osmotic laxatives, whereas GE specialists were satisfied with osmotic laxatives, laxative combinations, and linaclotide; the high proportion of doctors satisfied with the latter is worthy of note.

Clinical differentiation between FC and IBS-C was deemed quite difficult or very difficult by 54.7% of PC practitioners and 53.1% of GE doctors, which is clearly in contrast with the above-mentioned diagnostic description in the medical records.

Also striking is the theoretical consideration that colonoscopy is needed for diagnosis, since 58.4% of PC doctors and 47.4% of GE doctors expressed that they agreed somewhat, very much or completely with this claim, which is in contrast with their self-reported clinical behavior.

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**Table II. Diagnostic tests ordered by PC physicians according to the possibility of having a colonoscopy performed**

<table>
<thead>
<tr>
<th>Test</th>
<th>Never</th>
<th>Sometimes</th>
<th>Half of the times</th>
<th>Very often</th>
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<tbody>
<tr>
<td>Blood test</td>
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<td>Gastroscopy</td>
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<tr>
<td>Colonoscopy</td>
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<tr>
<td>Abdominal US</td>
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<td></td>
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<tr>
<td>Plain X-rays</td>
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<td></td>
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<tr>
<td>Opaque enema</td>
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**Table III.**
A considerable proportion of PC practitioners (77%) and GE specialists (46.9%) declared they had received no training on these problems during the past three years; a significant proportion considered such training as a need (95.3% of PC doctors and 82.4% of GE doctors).
The education sources most widely used by PC and GE specialists included conferences, courses, and workshops organized by scientific societies (78.4% and 78%, respectively), published clinical practice guidelines (70.3% and 75.5%), and papers reported in medical journals (60.3% and 74.7%).

As per the type of training on FC and IBS-C they considered to be most useful, no format (on-site, remote, written) stands out. Most professionals considered that having available a set of diagnostic and therapeutic guidelines for patients with constipation and abdominal complaints (pain, discomfort, bloating) (83.2% in PC, 80.9% in GE), as well as a local referral protocol (83.1% and 70.3%), would somewhat or very much enhance their clinical practice.

DISCUSSION

Our study, focused on the clinical issue of constipation with associated abdominal complaints, represents a photograph of the problem’s magnitude in both PC and GE clinics, of predominant clinical behaviors, of the perceptions entailed, and of the education needs acknowledged by the doctors involved.

This is a study with a number of different characteristics. First, it focuses on a clinical problem rather than on a diagnosed disease. Prior surveys in Spain focused on IBS (10,11); while behaviors related to the clinical problems leading to a diagnosis may be inferred, they do not necessarily reflect the attitudes assumed. The second peculiarity is our study is reflecting the real world setting in our country; this avoids the need to extrapolate data from surveys in other countries. Finally, the third peculiarity is we are providing an overall insight into the issue with the participation of PC and GE specialists, the doctors primarily involved in its management.

The problem raised by a patient with constipation and abdominal complaints is highly relevant in terms of frequency. It may be estimated to represent 2.5% of visits in the PC setting and 21% of visits in the GE setting. Therefore, any efforts to improve the way this problem is managed will result in great benefits in terms of patient numbers.

As regards clinical behaviors, notably, those of PC and GE physicians are similar overall, despite their different care level: approximately two thirds of respondents use empiric therapies and clinically-guided diagnostic tests. Regarding diagnostic tests, a clear difference may be seen between PC and GE specialists: both laboratory tests and colonoscopy, as well as ultrasounds, are ordered by 20% more GE than PC practitioners, which seems logical considering their respective health care levels. The fact that PC doctors allowed to order colonoscopies order these procedures less often than GE specialists (20% vs. 60% order them for at least half of patients) should also be highlighted; however, one third of PC respondents reported their not being allowed to directly order colonoscopy procedures. Furthermore, it is confirmed that the lack of usefulness of barium colon tests as compared to colonoscopy has left a deep mark in clinical practice.

The proportion of PC and GE physicians that reportedly use clinical guidelines and protocols in their daily practice is high (63% and 73%, respectively). Since clinical guidelines promote a clinical attitude of basing treatment on a clinical diagnosis and limited diagnostic studies, this response is consistent in magnitude with the reported data regarding clinical behavior. Of the clinical guidelines available, those on IBS issued by AEG - semFYC - Centro Cochrane Iberoamericano are most commonly used and best rated, despite their having 11 years of age, by both PC and GE doctors, which supports the need to develop clinical practice guidelines adapted to our country, and regularly updated.

Two aspects stand out regarding perceptions. First is the usefulness of the various therapies available. PC doctors rate general support and osmotic laxatives best; for GE specialists the highest scores go to osmotic laxatives, combined laxatives, and linaclotide. These results
are consistent with the scientific evidence available, and appropriate for each care level according to patient type. The second highlight is that over half of all respondents consider differentiating between IBS-C and FC to be quite challenging. Even though the Rome I-III criteria (18-20) differentiate both conditions, there is clinical and epidemiological evidence (3,21,22) of such difficulty as perceived by our survey, which also supports our approach based on the clinical issue, with protocols and guidelines focused on said issue rather than on diagnosis. In this issue a clinical practice guideline applied for patients with constipation and abdominal complaints (where IBS-C and FC converge) it’s also published, updated to the revised Rome IV criteria (23), that goes along these same footsteps and supplements the needs detected in this survey (24).

Finally, results make it obvious that considerable education needs remain to be satisfied, as reported by PC and GE doctors alike, and that new guidelines and protocols are needed to help approach this clinical problem in clinical practice.

The strength of this study is its provision of a joint picture depicting medical approaches and the perceptions regarding the issue of constipation with abdominal complaints from a medical standpoint; together with a recent study on patient perspectives (25), it helps to provide a bird’s eye view on a common problem.

However, it also has some weaknesses that must be recognized for a correct interpretation of its results. First, the sample size reached was relatively small, despite the efforts invested: directories of the involved scientific societies and the support of the latter to invitations; easy way of responding via the Internet, and successive invitation waves. This low response rate does not allow the exclusion of a response bias, particularly the possibility that physicians with the greatest interest in the surveyed clinical issue responded more often than those less interested; this potential bias suggests that the picture obtained by this survey is the “best photograph” possible, and interpretations should, according to our judgement, be approached from this same perspective. Secondly, although this was a collaborative effort where various clinicians and experts helped develop the questionnaire, no complete formal validation took place, and whether responses accurately match each respondent’s clinical practice was not specifically assessed. To the best of our understanding, such validation process is simply not warranted, in terms of time and cost, by the goals of our survey.

CONFLICTS OF INTEREST

The contributing authors who signed this paper did so on behalf of the Sociedad Española de Patología Digestiva (SEPD), Sociedad Española de Medicina de Familia y Comunitaria (semFYC), Sociedad Española de Médicos de Atención Primaria (SEMERGEN), and Sociedad Española
de Médicos Generales y de Familia (SEMG). Neither these scientific societies nor any of their work group members have any relationships whatsoever with the companies developing the drugs used for the conditions researched in this survey. SEPD, semFYC, SEMERGEN and SEMG, as well as their work group members, have no financial interests in the companies researching and distributing drugs for these digestive conditions; however, both the aforementioned societies and their members do have a sustained relationship with said companies in order to promote training, research, and clinical practice improvements leading to the enhancement of digestive health. Finally, SEPD, semFYC, SEMERGEN and SEMG, as well as the undersigned, declare that the present survey was supported by Almirall, who had no influence and took no part in its related discussions and development, and was not aware of the contents of the preliminary, intermediate or final text before its publication in The Spanish Journal of Gastroenterology (Revista Española de Enfermedades Digestivas) and the official voices of each participating society. ER received support for clinical studies and conferences from Norgine Ibérica and Almirall.

ACKNOWLEDGMENTS

The authors are grateful to the four scientific societies they are members of for their cooperation, and thank Marién Castillo Sánchez for her mechanization work and the management of data collectors, as well as Joaquín León Molina for his help with references.

Also they are thankful to Fermín Mearin, Constanza Ciriza and Miguel Mínguez that, as external expert reviewers, helped in the process of developing the questionnaire.

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