

Practice styles, knowledge and attitudes of general practitioners and gastroenterology specialists who treat gastroesophageal reflux disease

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Abstract

As little is known on the subject, our aim was to compare practice styles, knowledge and attitudes of general practitioners (GPs), and gastroenterology specialists (GIs) regarding the treatment of gastroesophageal reflux disease (GERD).

An internet survey designed by the authors was sent nationwide and randomly to 290 GIs and 1312 GPs. We assessed for the burden of GERD, indications for referral for a GI consultation, criteria for proton pump inhibitors (PPIs) selection, and main unmet treatment needs.

Forty (14%) GIs and 132 (10%) GPs returned the questionnaire. Both groups treat 13 to 14 GERD patients weekly (mean age 41–50 years). The most common first and second line drug of choice in both groups was omeprazole and esomeprazole, respectively. GIs stated that the most important consideration for the selection of treatment was high safety profile, whereas GPs considered it to be a rapid symptomatic relief. In the case of first and second line PPI failures, GIs tended to prescribe a non PPI treatment, whereas GPs restarted esomeprazole. GIs stated that the most prevalent conceived limitations of PPI treatment were nighttime heartburn and undesirable side effects, whereas GPs considered treatment inflexibility and drug interactions.

GIs and GPs hold different practice styles, knowledge, and attitudes on the treatment of GERD. Our findings ascertain the need for the development of updated National Clinical Guidelines focusing on GERD.

Abbreviations: GERD = gastroesophageal reflux disease, GIs = gastroenterology specialists (GIs), GPs = general practitioners, H2RAs = histamine type 2 receptor antagonists, PPI = proton pump inhibitor.

Keywords: gastroenterology specialists, general practitioners, GERD, PPI

1. Introduction

Gastroesophageal reflux disease (GERD) is a common medical condition, with a reported prevalence of 10 to 20% in the general adult population.^[1] The typical clinical symptoms consist of heartburn and regurgitation, although multiple less typical symptoms, such as dysphagia, non-cardiac chest pain and a range of ear, nose, and throat conditions are also attributed to GERD.^[2–6] Although GERD can be complicated by erosive disease, peptic strictures, Barrett's esophagus, and

malignant transformation,^[3] endoscopy findings are normal in the majority of GERD patients.^[5] GERD causes reduction in patients' quality of life, and significant economical expenses for both patients and National Health Services worldwide.^[4,5] GPs are the main providers of medical therapy for adults suffering from GERD, and in many instances act as the gatekeepers to secondary care.^[6]

Multiple drug options are available for the treatment of GERD, mainly over the counter antacids,^[7] histamine type 2 receptor antagonists (H2RAs),^[8] and proton pump inhibitors (PPIs).^[9] PPIs, which effectively block gastric acid secretion, have profoundly revolutionized the treatment of GERD,^[10,11] and are the most frequently prescribed drug for GERD. Nevertheless, the treatment for GERD may still be challenging for both GPs and gastroenterology specialists (GIs), as up to 40% of the patients have incomplete, or no response to PPI therapy.^[12] In fact, PPIs are less effective in non-erosive reflux disease (NERD), post prandial regurgitation, acid breakthrough, and extra-esophageal symptoms.^[13–15] Furthermore, there are several dissimilarities in the perception of GERD between patients and their physicians, and between GPs and GIs in regard to treatment strategies and goals. Due to safety regulations, for the treatment of uncomplicated GERD, PPI is usually started at the lowest dose. Titration to the lowest PPI dose allowing the clinical resolution is advised if the patients do not respond to the lowest dose.

Currently, an updated Israeli consensus on GERD treatment is still under development. One of the major indications directing us towards the need to form such a consensus was the gaps in knowledge between GPs and GIs.

Thus, the aims of the present study were to evaluate strategies and goals for the treatment of GERD among GPs and GIs, to

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discover the actual consideration for drug selection, and to reveal the conceived limitations of the available treatment options.

2. Methods

2.1. Internet questionnaire survey

An internet questionnaire survey was conducted during January and February 2016, with the assistance of an internet research company (Tovanot, Inc., Kefar Saba, Israel), randomly targeting 290 GIs and 1312 GPs. To qualify for the survey, GIs had to be board certified, and GPs had to have at least 3 years of practical experience. Accompanying the questionnaire was a cover letter explaining the purposes of the study. The first part of the questionnaire covered the demographics and characteristics of the treated population, namely, age, sex, number of patient meetings per week, main complaints related to GERD, and reasons for referral for further consultations. The second section comprised a structured questionnaire covering central parameters for drug selection, main goals of drug therapy, definition of treatment efficacy, perceived limitations of the available treatment, and questions regarding the treatment strategies and drug selection for GERD. Due to its design, no need for an ethics committee or institutional review board was required to approve the study.

2.2. Statistical methods

We selected for analysis only the first 3 choices of factors for each parameter (drug selection, main goals, definition of treatment efficacy, perceived limitations of treatment). A sub-analysis comparing the most common choice for each parameter was also performed. A comparison of the responses of GPs and GIs was also conducted, using the SPSS for windows program (16.0; SSS Inc, Chicago, IL, USA). We used the chi square test or Fisher's exact probability test for dichotomous variables. A *P* value < .05 was considered significant. All results are expressed as mean \pm standard deviation.

3. Results

Overall, 40 (14%) GIs and 132 (10%) GPs agreed to participate in the study, and completed the internet survey. The maximal sample error (CI 95%) was $\pm 13.4\%$ and $\pm 8.8\%$ for GIs and GPs, respectively. All GPs who responded to the survey worked at primary health maintenance organization (HMO) settings, and all GIs who responded worked in medical centers, most of them are academic centers.

3.1. Patient's demographics and symptoms

On average, GPs and GIs examined the same number of GERD patients/week (14 and 13 patients/week, respectively). GPs tended to treat similar proportions of females and males (51% vs 49%), whereas GIs tended to treat more males (56% vs 44%). Most GERD patients seen by GP have and GIs were in the age group of 41 to 50 years (45% and 43%, respectively). However, GPs tended to treat older patients, whereas GIs were more likely to treat younger patients. Nighttime symptoms were reported by 30% and 31% of GPs and GIs, respectively. Table 1 summarizes the main characteristics of GERD patients' as described by their physicians.

3.2. GERD treatment

Overall, 32% of the patients examined by GP's were referred for further GI consultation. The main causes for referral were failure

Table 1

Patients' profile as reported by general practitioners (GPs) and gastroenterology specialists (GIs).

Characteristics	GP's (n=132)	GI's (n=40)	P value
No. of patients/week	14	13	1
Patient's Age, years			
>20 y	1%	5%	1
21–40 y	20%	36%	.42
41–50 y	45%	43%	1
51–65 y	30%	15%	.36
>65 y	4%	1%	1
Gender, male	56%	44%	1
Nighttime symptoms	30%	31%	1

GIs = gastroenterology specialists, GPs = general practitioners.

of the PPI treatment (46%), and the presence of warning signs for significant gastrointestinal pathology. Only 9% of the GPs referred their patients to GI specialist after long-term treatment failure. The reasons for referral for further GI consultation are summarized in Table 2.

Both GPs and GIs chose PPIs as the first line of drug treatment for GERD (90% and 94%, respectively). Omeprazole was the most frequent PPI prescribed (83% and 93% among GPs and GIs, respectively). Correspondingly, only a minority of GPs (10%) and GIs (6%) selected non PPI treatment modalities for the first line of drug therapy. In the case of treatment failure, most GPs and GIs would consider dose escalation (72% and 73%, respectively). In the case of ongoing failure of therapy, 75% of the GP's and 48% of the GIs indicated that they would exchange the drug for another brand of PPI, whereas the remaining physicians would prefer add-on therapy with another mechanism of action (H2 blocker or/and antacids).

As for the selection of the second line of drug treatment for GERD, PPI's were selected as the most prevalent choice by both GPs and GIs (91% and 88%, respectively). Esomeprazole was the most common second-line PPI selected by GPs (53%) and GIs (41%), followed by lansoprazole (30% of GPs, 10% of GIs), and pantoprazole (20% of GPs, 10% of GIs).

The selection of treatment in the case of long-term treatment failure differed considerably between GPs and GIs. Fifty-one percent of GP's considered further PPI treatment, whereas 27% preferred a non PPI based treatment, and 9% would refer the patient for a GI specialist consultation. Among GIs, the selection of treatment varied considerably: 45% would consider a non PPI based treatment, 28% would continue PPI treatment, and the rest

Table 2

Main causes for referral for gastroenterology specialist (GI) consultation.

Cause for referral for GI consultation	Percent of all referrals
Failure of therapy	46%
Chronic GERD symptoms	16%
Weight loss/appetite loss	15%
Age > 45–50 years	15%
Abdominal pain/discomfort	8%
New onset GERD symptoms	8%
Positive warning signs	8%
Family history of upper GI malignancy	7%
Gastrointestinal bleeding	5%
Vomiting	5%

GERD = gastroesophageal reflux disease, GI = gastroenterology specialist.

would combine PPIs with another drug (H2RAs, antacid, or domperidone).

The major parameters for drug selection differed between GIs and GPs. GIs considered high safety profile as the most important factor (88%), whereas GPs considered both rapid onset of symptom relief (82%) and high safety profile (76%) as the most important factors for drug selection. In a sub-analysis of the results that focused on the first choice of each parameter (the most important factor), 58% of GIs indicated that high safety profile was the most important factor versus only 36% of GPs ($P=.017$). The main factors for drug selection are summarized in Figure 1.

The perceived definition of drug efficacy also varied between the groups. More GPs indicated rapid relief as the most favorable outcome, while relief of night symptoms was considered more significant by GIs. Both groups indicated the patient’s satisfaction, wish for same drug re-prescription, and single daily dose in similar extents. In a sub-analysis of the results that focused on the first choice of selection, patients’ satisfaction and wish for re-prescription of the same drug, was indicated more often by GIs (33%) than GPs (19%), $P=.05$.

Seventy percent of the GIs and 54% of the GPs identified limitations in the existing drug treatments for GERD. The most common limitation reported by GIs was the possible long-term adverse effects, and the failure to cover a 24-hour symptom-free period (23% and 28%, respectively), while the main limitation reported by the GPs were the prerequisite for food-related intake (14%) and the potential drug interactions, mainly with

clopidogrel, (11%). Figure 2 summarizes the main limitations of PPIs as reported by the 2 groups,

Approximately, 88% of GIs and 55% of GPs would consider prescribing a new medication, provided it is long-acting, prescribed once daily, and without drug interactions.

4. Discussion

This internet cased survey highlighted several similarities, as well as the main differences between 2 groups of physicians who treat GERD, that is, GIs and GPs. To the best of our knowledge this is the first study that has compared practice styles, knowledge and attitudes of GPs and GIs regarding adults suffering from GERD.

We found that only a minority of the GPs referred their patients to GI specialist after long-term treatment failure. This may represent a GPs knowledge gap regarding the indications for endoscopy in PPI-unresponsive GERD. We found that both groups of physicians selected omeprazole as the first, and esomeprazole as the second drug of choice for the treatment of their GERD patients. It should be mentioned that omeprazole was the first PPI introduced in Israel, and for years dominated the local market due to well-established experience and rather low price.

Similarly, both groups approached the first episode of PPI failure by escalating the dose of PPI. These similarities represent the net effects of educational programs for Israeli GPs, and the Israeli Medical Insurance Companies recommendations on

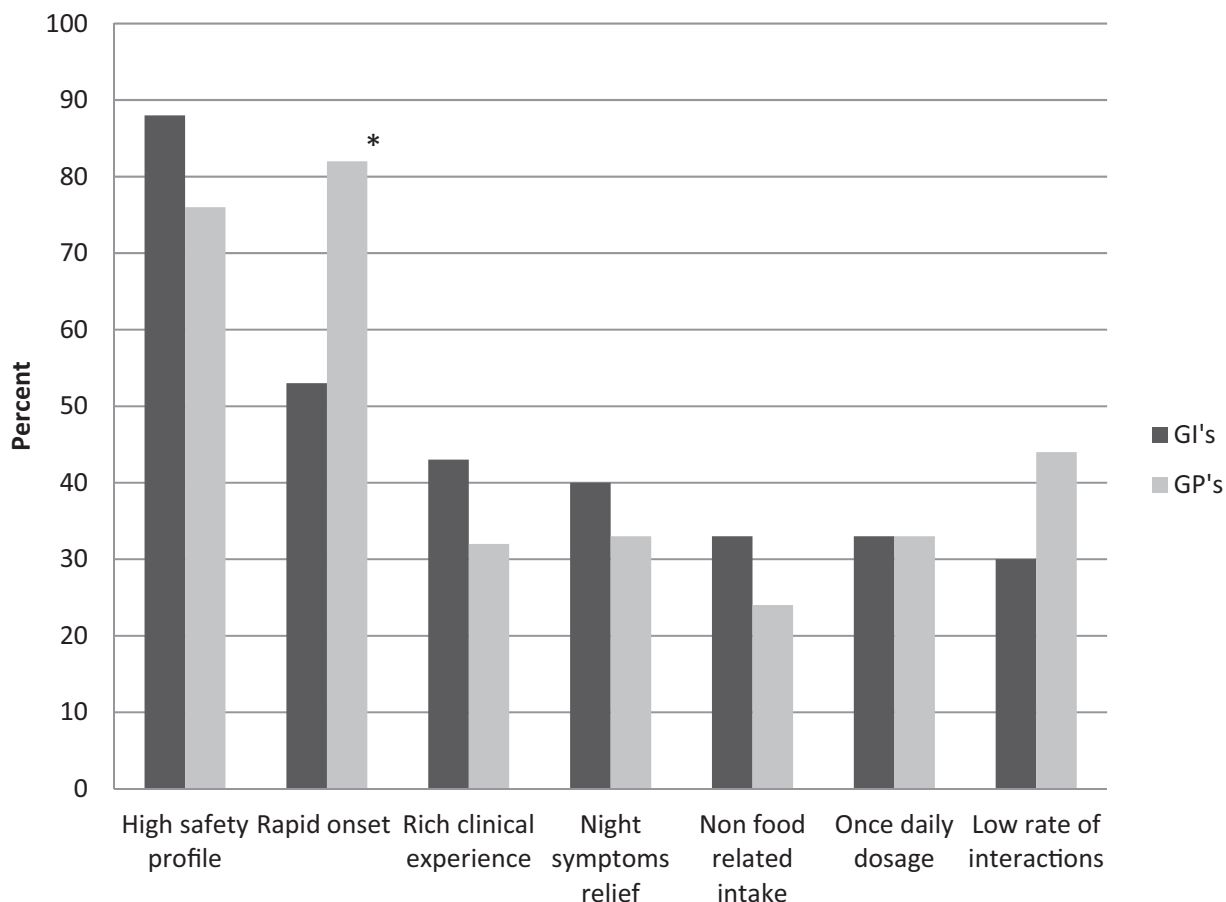


Figure 1. The main factors for drug selection as reported by GPs and GIs. GIs=gastroenterology specialists, GPs=general practitioners.

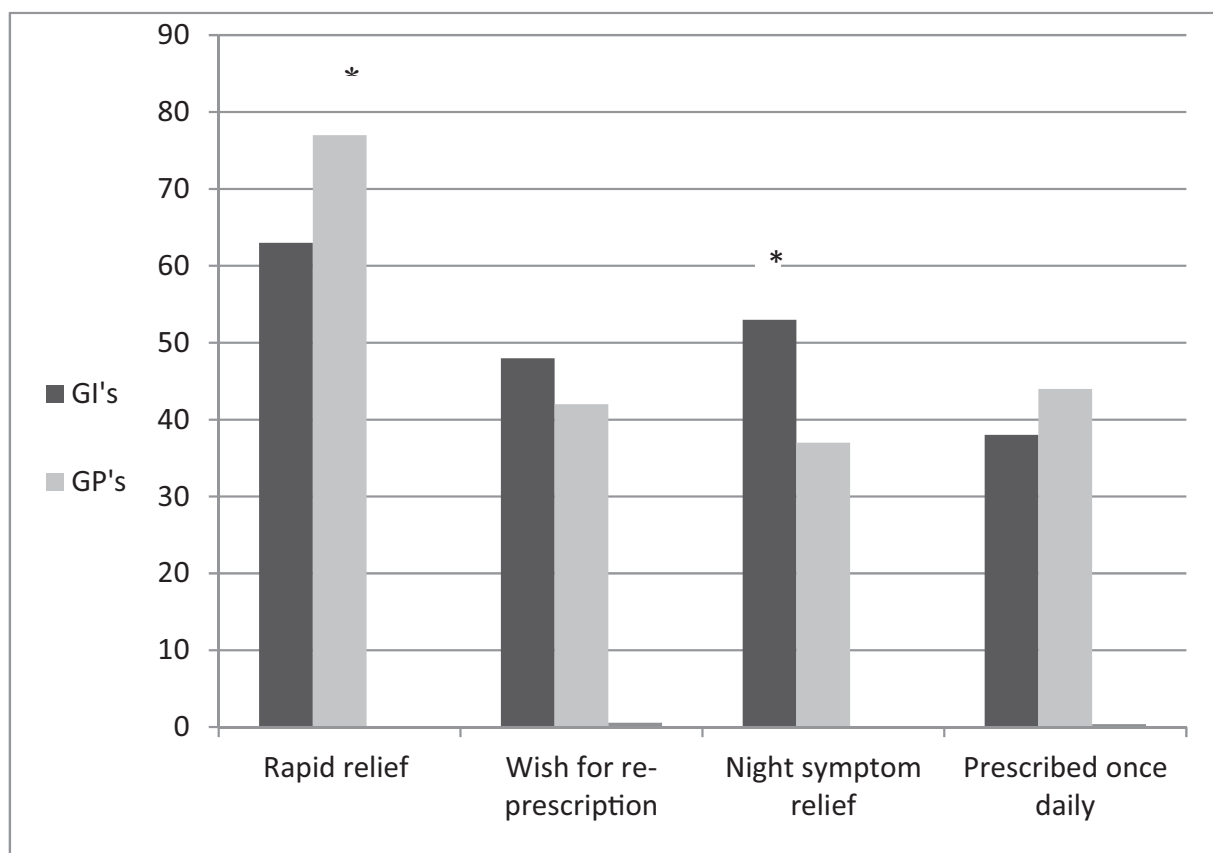


Figure 2. Main perceived limitations of PPI therapy as reported by GPs and GIs. GIs = gastroenterology specialists, GPs = general practitioners, PPI = proton pump inhibitors.

GERD treatment for both GIs and GPs. Educational programs for GPs regarding GERD treatment, are offered quite frequently by the Israeli Neurogastroenterology Group (ING). Moreover, the Israeli Medical Insurance Companies actively advised on the brand of PPI to use. Thus, PPIs that are not on the recommended list are much less prescribed, as they are more expensive.

However, we found several differences in practice styles, knowledge and attitudes between GIs and GPs in the case of persistent PPI failure (second episode of PPI failure despite PPIs dose escalation). Approaching this medical condition, more GPs exchanged the current PPI to another brand, whereas more GIs tended to prefer add-on therapy with another mechanism of action (e.g., antacid, alginate, or H2RA). Additionally, in the case of a third episode of PPI failure, despite several attempts to change dosage or brand, more GIs selected to stop PPI treatment, and to search for another mechanism underlying treatment failure, whereas GPs continued PPIs and only a minority stopped treatment or chose to refer patients for a consultation with an expert. These findings represent the existence of a gap in the level of knowledge between GIs and GPs. A possible explanation for this gap may be due to the fact that most GPs are rarely exposed to updated clinical guidelines regarding gastrointestinal conditions, or dealing with complicated medical conditions, such as the case of persistent PPI failure.^[16] Major discrepancies between GPs practice and national or international guidelines for GERD diagnosis were reported by other researchers. Eisendrath et al demonstrated that GPs underused endoscopy in patients with alarm symptoms of GERD, and in older patients with a new onset of GERD symptoms.^[17] Moreover, in that study, more GPs were

influenced by the severity of symptoms rather than by the type of symptoms.

Another difference in attitude between GIs and GPs pertained to their most important parameters for drug selection. We found that more GPs considered rapid onset of symptoms relief, as the most important parameter, whereas GIs selected high safety profile. This finding may reflect the different natures of these physicians daily clinical work scenarios. Worldwide, most patients with uncomplicated or naive GERD are seen by GPs in busy, high volume primary medical centers. Thus, it is clear why GPs considered rapid onset of symptoms relief, as the most important parameter.

We found that GIs and GPs perceived differently the concept of drug efficacy as more GPs selected rapid onset of symptoms relief whereas GIs selected relief of night time heartburn. Furthermore, regarding unmet treatment needs, only the GIs selected symptoms control during night time, while GPs chose treatment inflexibility (dosing and timing) and risky drug interactions with clopidogrel, highlighting, yet again, the different nature of GIs and GPs daily clinical practice scenarios, and the gap in the level of knowledge between the groups.^[16] Another explanation is related to the fact that Israel, GIs are usually part of a GI team in secondary or tertiary medical centers; as a neurogastroenterology experts are also usually part of these GI teams, experience with the treatment of resistant cases of GERD is more common in this group.

Based on the results of our survey, the ING intends to develop in 2018 local clinical guidelines for GPs and GIs that will focus on GERD, including the approach to persistent PPI failure, and other controversial issues. We hope that these guidelines will help

reduce differences in practice styles, knowledge and attitudes of GPs and GIs regarding GERD treatment.

5. Study limitations

Our results may have been limited by the low response rate of the professional community to the questionnaires, although this is true for many other questionnaire-based studies. Moreover, the comparison of the GIs and GPs was not analyzed by confounding effect of gender and age, or experience in years. Thus, at least some of the dissimilarities in their perceptions may be related to gender and age differences.

In summary, to the best of our knowledge this is the first study that has compared practice styles, knowledge, and attitudes of GPs and GIs regarding simple and advanced treatments of GERD. We found that practice styles, knowledge and attitudes of GPs and GIs regarding GERD treatment differed considerably. GPs and GIs hold different attitudes and conceive differently the parameters for efficacy and the unmet needs of PPI's therapy. To overcome these differences, the ING decided to strongly support the development of updated Clinical Guidelines, focusing on GERD treatment, for GIs and GPs.

Author contributions

Conceptualization: Ram Dickman, Dan Carter.

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