ORIGINAL ARTICLE

A Health Outcome Appraisal based on Quality of Life Measures in Patients of Gastroesophageal Reflux Disorder Receiving Treatment with a Proton Pump Inhibitor and a Prokinetic Agent

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ABSTRACT

Objectives: We analyzed whether lifestyle modification involving dietary restrictions, exercise, quitting smoking, loosing weight, etc has a meaningful impact on health care outcome of patients with gastroesophageal reflux disorder (GERD) receiving treatment with pantoprazole and Itopride Hydrochloride as a post hoc analysis of an observational study that investigated the effect of pantoprazole and itopride on QOL

Methods: Patients with GERD received pantoprazole and itopride for 8 weeks. Health-Related Quality of Life (HRQOL) was assessed using the 8-Item Short-Form Health Survey (SF-8) and GERD-specific QOL questionnaires at baseline and after 4 and 8 weeks of treatment. Physical and mental component summaries (PCS, MCS) and GERD-specific summary (GERDS) scores were calculated.

Results: Of the 187 patients analyzed, 40.8% were advised regarding new lifestyle at the start of pantoprazole/itopride treatment (Group A), 33.3% were advised to continue the lifestyle as advised previously (Group B), and 25.9 % did not receive any advice (Group C). The change in PCS from baseline at week 8 for Group A was 5.7±8.1, and this was significantly greater ($P<0.001$) than the increases achieved in Groups B (4.3±7.5) and C (4.0±7.6). The changes in MCS and GERDS were also significantly greater in Group A than in the other groups. The changes in QOLS from baseline were significantly greater in Group A than in the other groups, irrespective of baseline pt characteristics.

Conclusions: Lifestyle modification may be clinically beneficial in terms of improving QOL in a segment of Pakistani patients with GERD who are receiving treatment with a PPI.

Key words: Quality of life, gastroesophageal reflux, proton pump inhibitor

INTRODUCTION

Quality of Life measures (QOL) have become a vital part of health outcome appraisals. Considering a chronic disease like GERD prevalent widely in a population with limited resources and where cure is not generally possible, measurement of QOL provides a meaningful way to determine the impact of health care.

GERD is one of the most common if not the commonest disorder encountered by physicians in our urban and especially rural population. It is estimated to occur in 10-20% of Western societies and 2.5-6.7 in Asian populations[1,2] and the over all prevalence seems to have increased in recent years. Although lifestyle advice is generally well accepted and is expected to improve symptoms and quality of life (QOL) of patients with GERD, there are very few data from randomized clinical trials to support this view[3].

Recently, we conducted an observational study to determine the baseline characteristics and HRQOL of patients with GERD and to evaluate the effect of a short course of anti-secretory therapy with the proton pump inhibitor (PPI) pantoprazole and a prokinetic agent itopride slow release on HRQOL. The study was an open-labeled, observational study involving the outpatient department of Sharif Medical & Dental College and Amaar Medical Complex. This report presents the results of a post hoc analysis, which investigated whether there was any effect of the lifestyle modification on the improvement in HRQOL, in patients with GERD who were treated with pantoprazole/itopride.

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METHODS

A total of 250 patients were enrolled into the study, which was performed between January 2012 and June 2012. Patients enrolled in the study included those with newly diagnosed GERD, those who had a relapse of GERD following previous anti-secretory therapy. Patients were treated with pantoprazole 40-80mg/day and itopride sr 150 mg/day for 8 weeks. Prior to enrolment, the purpose and methodology of this study were explained to all patients.

Quality of life was assessed by a self-administered questionnaire using the 8-item Short-Form-Health Survey (SF-8) and a Gastroesophageal Reflux Disease-Health-Related Quality-of-Life questionnaire (GERD Specific QOLS), at baseline, after

4 weeks and 8 weeks of pantoprazole/itopride therapy.

The SF-8 is a generic questionnaire that is derived from the longer 36-item Short-Form-Health Survey (SF-36) and is developed to estimate Health Related Quality of Life (HRQOL) based on the scores from eight domains and two summaries. Scores for the physical (PCS) and mental (MCS) component summaries are calculated according to the manual of the SF-8. A score of 50 is the mean for our general population across the eight domains and two summary scores;higher scores indicate a better HRQOL.

Although hunger and sleep are known to be affected in GERD patients, the SF-8 does not address these conditions, so we developed a new GERD-specific QOL questionnaire which comprises five questions. The grade of "difficulty in daily life", "dissatisfaction with limitation in eating amount", "dissatisfaction with avoiding favourite food", "dissatisfaction with disturbance in falling asleep" and "dissatisfaction with interrupted sleep" were assessed using a five point scale (5, not at all;4, slightly;3, moderately;2, quiet a lot;1, extremely).The score from the above were used for three domains "daily life"' "eating"' "sleeping". The mean score of these three domains was defined as the GERD specific summary score (GERDS). The score from each domain and GERDS ranged from 1 to 5, with higher score indicating a better QOL.

The QOLS was self-administered with each patient required to complete the questionnaire in the clinic. Each patient was given a copy of the response scale to refer to when making their decision as to the most appropriate point on the scale. The average time for completion of scale was 5 minutes. The QOLS was scored by adding the score on each item to yield a total score for the instrument. Higher scores indicate a better QOL[4].

Numerical data were presented as mean±s.d. The chi-squared tests were used to compare patient characteristics between groups. Paired t-tests were used to compare HRQOL scores between baseline and week 8, and Student's t-tests were used to compare the difference in HRQOL score at baseline and week 8 between each group. Bonferroni adjustment was used for multiple comparisons. Values of P<0.05 (two-sided) were considered to be statistically significant.

RESULTS

Patient characteristics of the 250 patients enrolled in this study, 187 were eligible for analysis (the excluded 63 did not complete the QOL questionnaire at both weeks 4 and 8). The patient characteristics of the study population are summarized in Table 1. Of the patients analyzed 40.8% were advised regarding new lifestyle at the start of pantoprazole/itopride administration (Group A), 33.3% were advised to continue the same lifestyle as advised previously (Group B), and 25.9% did not receive any advice on lifestyle modification (Group C). Statistically significant differences between groups were observed in sex, age, baseline severity of typical symptoms, and initial dose of pantoprazole/itopride.

Table 1: Summary of baseline patient characteristics

	Group A (n=76)	**Group B (n=63)**	**Group C (n=48)**
Sex a,b			
Male	42.0	37.7	41.1
Female	58.0	62.3	58.9
Age a,b,c			
<60years	38.5	25.8	33.2
>60years	61.5	74.2	66.8
Severity of typical symptoms (heartburn/ regurgitation)a,b,c			
Severe	15.6	12.3	11.7
Moderate	51.6	48.6	44.5
Mild	28.3	33.2	35.9
None	4.2	5.4	7.2
Initial dose of Pantoprazole/Itoprideа,b,c			
40mg/150mg	63.2	54.0	57.0
80mg/150mg	36.8	46.0	43.0

aP<0.05(Group A vs Group B). bP<0.05(Group B vs Group C). cP<0.05(Group A vs Group C).

Table 2: Summary of HRQOL scores

	Group A	**Group B**	**Group C**
Physical component summary			
Baseline	44.2±7.6	44.6±7.5	45.0 ±7.6
Week 8	49.9±6.0a	48.9±6.6a	49.1±6.5a
Mental component summary			
Baseline	46.0±7.9	47.0±7.8	46.9±7.5
Week 8	50.7±5.9a	50.3±6.2a	50.3±6.1a
GERD-specific summary			
Baseline	3.45±0.91	3.56 ±0.87	3.60 ±0.87
Week 8	4.46±0.63a	4.38±0.66a	4.45±0.64a

HRQOL, health-related quality of life; GERD, gastroesophageal reflux disorder. Mean± s.d. aP < 0.01 baseline vs. week 8.

Mean PCS, MCS, and GERDS scores at baseline and week 8 were summarized in Table 2. The difference in PCS between baseline and week 8 for Group A was 5.7±8.1 which was significantly greater than that achieved by Groups B (4.3±7.5) and C (4.0±7.6). In addition, changes in MCS and GERDS were significantly greater in Group A than in the other groups. Results of stratified analysis, according to baseline patient characteristics, were summarized in Table 3. At week 8, the changes in HRQOL scores from baseline were significantly greater in Group A than in other groups irrespective of sex, age, baseline severity of typical symptoms or initial dose of pantoprazole/itopride.

Table 3: Changes in HRQOL scores from baseline at week 8 according to patient characteristics

	PCS			MCS			RES		
Group	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**
Male	6.1a,b	4.2	3.9	4.5a,b	3.4	3.5	1.04a,b	0.80	0.83
Female	5.5a,b	4.3	4.1	4.8a,b	3.3	3.4	1.00a,b	0.83	0.85
Age									
<60 years	6.2a,b	4.7	4.9	5.5a	4.1	4.7	1.08a,b	0.88	0.95
>60 years	5.4a,b	4.1	3.6	4.2a,b	3.1	2.8	0.97a,b	0.80	0.79
Baseline severity of typical symptom (heartburn or regurgitation)									
Severe	9.7a,b	7.4	7.0	8.3a,b	6.8	5.8	1.60a,b	1.37	1.36
Moderate	5.6a,b	4.8	4.4	4.8a,b	3.8	3.7	1.08a,b	0.93	0.94
Mild	3.9a,b	2.9	3.2	2.8a	1.8b	2.7	0.66a	0.55c	0.64
Initial dose of pantoprazole/itopride									
40mg/150mg	5.7a,b	4.3	4.4	4.8a,b	3.4	3.6	1.01a,b	0.84	0.87
80mg/150mg	5.8a,b	4.3	3.6	4.5a,b	3.3	3.3	1.02a,b	0.80	0.80

HRQOL, health-related quality of life; MCS, mental component summary; PCS, physical component summary; GERDS; gastroesophageal reflux disorder specific summary.
aP< 0.05 (Group A vs. Group B). bP < 0.05 (Group A vs. Group C). cP < 0.05 (Group B vs. Group C).

Details of Life style Modifications Advised: Avoid fatty food, sweet food, carbonated beverages, spicy food, coffee, large meals, alcohol, meals before sleep, loose weight, clothing that tighten abdomen, quit smoking and elevate head of bed.

DISCUSSION

Among the various lifestyle modifications available to GERD patients, dietary advice is considered one of the most important because the majority of reflux symptoms occur after meals[5]. It has been reported that fatty foods, chocolate, and spicy foods are all able to decrease lower esophageal sphincter pressure which can result in gastroesophageal reflux[6,7,8]. Furthermore, gastric distension after large meals increases the likelihood of transient lower esophageal sphincter relaxations (TLESRs), which also increases the risk of reflux[9,10].

Many physicians believe that dietary modification reduces the severity of symptoms associated with GERD; in this study, HRQOL scores for all domains of the SF-8 and GERD-specific HRQOL questionnaires were improved significantly after 8 weeks of pantoprazole/itopride treatment. The changes in the HRQOL scores from baseline at week 8 were significantly greater in patients who were advised specifically regarding lifestyle modification at the start of treatment compared with patients who continued lifestyle as advised previously, and those who were not advised.

Although the present analysis suggests the benefits of lifestyle modification on HRQOL of patients with GERD, it has some limitations. Patients were not allocated randomly to treatment groups based on lifestyle modification, as the present analysis was not a primary endpoint of the study but a post hoc evaluation. As statistically significant differences between groups were observed in sex, age, baseline severity of typical symptoms, and initial dose of pantoprazole/itopride, stratified analysis according to baseline patient characteristics was performed. The changes in HRQOL scores from baseline were significantly greater in patients who were advised lifestyle modification than in the other patient groups irrespective of baseline patient characteristics. These findings support a positive effect of lifestyle modification on HRQOL.

In conclusion, based on this post hoc analysis it appears that life style modification is clinically beneficial in terms of improving HRQOL.

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