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Effect of gastric symptoms, age and gender on quality of life

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Digestive symptoms are the most common and frequent symptoms being reported. It is difficult to measure their effects on quality of life, as they varied by age and gender. Therefore, our aim was to determine the effect of gastric symptoms on quality of life and to explore their relationship with age and gender. A secondary analysis of an original pragmatic randomized trial with repeated measurements was conducted in gastroenterology clinic in UK from 28 July 2006 to 31 January 2007 on some 302 patients presenting with any gastric complaint, following the selection criteria. Gastric symptom was determined by GSRQ (Gastro intestinal Symptom Rating Questionnaire) and quality of life by EQ5D (Euroqol 5 dimension scale) Profile and VAS (Visual Analogue Scale) questionnaires. The results showed negative correlation between gastric symptoms (components) and quality of life (p<0.05) except for lower abdominal symptoms and VAS (p>0.05). The results also showed that age has statistically insignificant negative relationship with EQ5D Profile and VAS. Males have good quality of life (p<0.05) than females. The aforementioned results showed increase in gastric symptoms is associated with poor quality of life. In the light of the aforementioned results, it would be recommended that 'primary care physicians should consider patient demographics of age and gender when focusing on diagnosing, implementing treatment and management plans and advising patients presenting with gastric symptoms. This will not only improve the clinical outcomes but will also increase the patient satisfaction.

Key words: Gastric symptoms, quality of life, epidemiology, relationship.

INTRODUCTION

Gastrointestinal (GI) symptoms are very common in both adults and elderly populations; they are highly prevalent in different geographic populations and cause various gastrointestinal symptoms that can greatly decrease the quality of lives of those affected (Jeong et al., 2008). About 50% of new outpatient referrals to hospital gastroenterology departments in UK are from patients presenting with GI symptoms. In developing countries, round worms and hook worms infections are more common, along with protozoal (intestinal) infection, amoebiasis that affects over 10% of the world population. Over 20% of all cancers occur in gastrointestinal tract (Kumar and Clark, 1994).

A study conducted on asymptomatic health volunteers in Brazil showed prevalence of peptic lesions was 45%, erosive oesophagitis 23%, gastric/duodenal ulcers 9% and gastric/duodenal erosions was 36% (Ecclissato et al., 2001). Another study conducted on Australian community showed frequency of IBS, dyspepsia, and gastro-oesophageal reflux were 11.8, 11.5 and 17.5%, respectively. In general, about 60% of the Australian population reported four or more gastrointestinal symptoms (Talley et al., 1998).

The digestive symptoms are one of the most common and frequent symptoms being reported by the patients (Spiller, 2001). The GI disorders have a definite effect on the quality of life including psychological well-being (Strine et al., 2007). Some gastric symptoms such as

oesophagitis, gastric ulcer, duodenal ulcer and duodenitis/gastritis have more effect on quality of life while others have negligible. Even some common symptoms such as nausea, GERD (Gastro Esopaheal Reflux Disease), constipation, flatulence and dyspepsia (Kang, 1990) can markedly affect the quality of life of the patients.

It is difficult to measure gastric effects on quality of life, even for clinicians (Spiller, 2001), as both gastric symptoms prevalence and their effect on quality of life varies with age and gender. A survey conducted on a Swedish population showed that the prevalence of GERD symptoms remained stable, whereas the prevalence of IBS increased over time, independent of aging. Furthermore, dyspepsia decreased with advancing age (Agreus et al., 2001). The female sex is also associated with lower physical component summary (PCS) and neck disability index (NDI) scores (Kay et al., 1994). In dyspeptics, women had poor physical and mental well being and NDI scores than males (Kay et al., 1994). Qazi (2009) also found that overall there is significant negative correlation between gastric symptoms (components) and quality of life except for lower abdominal symptom.

However, studies have shown a difference in the evaluation of gastric symptoms severity between patients and physicians. General practitioner (GP) often underestimate patient gastric symptoms severity and quality of life and overestimate treatment effects that lead to decrease patient satisfaction (Fallone et al., 2004; McColl et al., 2005). The problem arises as both the prevalence of gastric symptoms and the relationship of gastric symptoms with quality of life is dependent on age and gender. In addition, there are also communication problems between physicians and patients leading to delay in early disease management as well as decreasing treatment compliance (Carlsson et al., 1998). There are limited studies available that explore the role of age and gender on gastric symptoms and quality of life. Thus, there is a need for a study so that primary clinicians can play more focused attention on gastric symptoms and how they influence a person's quality of life with respect to particular age and gender (Flook and Wiklund, 2007).

Our aim was to determine the effect of age and gender on gastric symptoms using Gastro Intestinal Symptom Rating Questionnaire (GSRQ) on quality of life using Euroqol 5 dimension scale (EQ5D) and Visual Analogue Scale (VAS). We also aim to explore the effect of age and gender on the relationship between gastric symptoms and quality of life. The study results will enable primary physicians and gastroenterologists in understanding the patient's perspective of the impact of different gastric symptoms on quality of life particularly in relation to age and gender. This will improve the early diagnosis, better management and treatment plans and ultimately patients focused quality of care (Flook and Wiklund, 2007).

METHODOLOGY

Primary study

We conducted a secondary analysis on a trial named "SHAIRING" that is, "Self-assessment of Health and Illness: RCT IN Neath Gastroenterology Unit". The original trail was a pragmatic randomized trial with repeated measurements. The study setting was Gastroenterology unit at Neath Port Talbot Hospital UK. The recruitment period of the trial was from 28 July 2006 to 31 January 2007. The patients of any age and either gender presenting to gastroenterology clinic consecutively within the trial period with any gastric complaint and giving informed consent were included. The exclusion criteria was presenting with complaint of non gastric origin and having any other debilitating disease (Qazi, 2009).

Some 540 participants were randomly allocated into three groups of 180 each. The groups were categorized into the "experimental group" patients who completed the patient-focused outcome questionnaires and submitted them to their doctors, the "attention control" group who completed these questionnaires but did not show them to their doctors and the "treatment as usual control" group who did not complete these questionnaires.

Secondary analysis

We included some 302 patients that completely filled the patients-focused outcomes. The ethical approval of the secondary analysis was obtained from the School of Health Care Sciences Research Ethics Committee, University of Wales, Bangor, UK. The main outcomes of our analysis were quality of life instruments that are EQ5D Profile and VAS. The main predictors included age, gender and GSRQ.

Gastric symptom rating questionnaire (GSRQ)

The GSRQ comprises 25 different questions about the severity or frequency of different gastric symptoms. It was first developed and validated by Cheung et al. (2006). Broadly speaking the questionnaire covers four categories of symptoms – upper abdominal symptom, lower abdominal symptom, wind and defecation. One useful feature of the questionnaire is that unlike many questionnaires it does not rely much on memory and asks questions about the last two weeks. Another important aspect of GSRQ is that each question gives an explanation so that patients can understand the exact symptom that is being enquired about. The GSRQ includes questions about the symptoms of nausea, vomiting, retching, haematemesis (blood in vomiting), flatus (passing wind through the back passage) and abdominal bloatedness (air in stomach giving feeling of fullness). It also includes the key diagnostic symptoms of difficulty in swallowing and change in appetite along with other symptoms of diarrhea and constipation.

EQ5D Profile

This comprises five dimensions of health namely mobility, self-care, usual activities, pain and discomfort, and anxiety and depression. Each dimension must be classified as "no problems", "some problems" or "severe problems". The patient's health state is defined by combining all five scores through a complex procedure (EuroQol, 2012).

EQ5D visual analog scale (VAS)

This is a self-rated quantitative measure resembling a thermometer to measure quality of life. It is mostly used with the EQ5D Profile to give a more complete picture of respondents' health status. It asks them to put marks on the printed line which they judge to be their present states of health. As it is based on graphical representation, it complements the EQ5D Profile (EuroQol, 2012).

Statistical analysis

The statistical software used for analysis was the Statistical Package for Social Sciences SPSS version 14. The quantitative variables used were age, GSRQ (UAS, LAS, Wind and Defecation) and (EQ5D Profile and VAS). They were presented in means ± S.D. The only qualitative variable was gender reported in proportion or percentage. The statistical methods used were Pearsons, Spearmans correlation and Mann whitney U test. These analytical test were applied to determine the association between GSRQ (UAS, LAS, wind and defecation) and quality of life instruments that is EQ 5D profile and VAS. Correlation for association between age and quality of life (EQ5D profile and VAS) and Mann Whitney U test was used for exploring association between mean scores of two groups (male and female) and quality of life instruments (EQ5D profile and VAS).

RESULTS

The descriptive statistics showed that mean age of the patients was 56.045 (±16.694) with maximum and minimum values of 16 and 91, respectively. There were 132 (43.7%) males and 170 (56.3%) females, a total of 302 patients in our study. There were 258 (83%) patients who have any upper abdominal symptom, mean upper abdominal symptom score was 20.67 (±19.793). The total patients with lower abdominal symptoms were 225 (73.3%). The mean lower abdominal score was 35.64 (±32.476). The mean score for wind problem was 45.538 (±26.334). The total number of patients with wind problems was 294 (94.5%). The mean score for defecation problem among the patients was 21.322 (±18.994) with 247 (79.4%) patients having defection problems. The mean score for EQ5D quality of measure of life was found to be 0.615 (±0.304) and for VAS score was 61.923 (±22.143).

The analytical results showed that the correlation between UAS and EQ 5D and VAS profile shows statistically significant negative association ($p<0.001$). The correlation between LAS and EQ 5D profile showed statistically significant negative association ($p<0.05$); whereas, between LAS and VAS there was statistically insignificant negative association ($p>0.05$). The correlation between Wind problems and EQ 5D profile and VAS shows statistically significant negative association ($p<0.001$). The correlation between Defecation and VAS, and EQ 5D profile and VAS shows statistically significant negative association ($p<0.001$). The correlation between age and EQ-5D Profile and VAS show statistically insignificant negative association

($p>0.05$). The Mann-Whitney U test between males and females on EQ 5D profile and VAS shows mean for males is statistically significantly ($p<0.05$) higher than females (Table 1, 2, 3 and 4).

DISCUSSION

We found that most of the gastric symptoms (measured through GSRQ) except for lower abdominal symptoms are associated with decrease quality of life (measured through EQ5D profile), except for EQ VAS. We also found increased age has decrease quality of life on EQ5D Profile and VAS, though the results were non-significant. Interestingly, we also found better quality of life in males ($p<0.05$) than females.

Our findings were supported by previous studies that have shown patients with gastric symptoms have impaired quality of life (Strine et al., 2007; Kang, 1990). Tadashi et al. (2001) found that gastric symptoms such as heart burn and regurgitation were frequently associated with decreased quality of life. Similarly, studies have also shown that female sex is associated with increase gastric symptoms and quality of life, measured through several quality of life instruments (Wiklund et al., 1998).

Previous studies have also shown that those patients complaining of upper gastrointestinal symptoms have a low degree of quality of life and well being (Dimenas, 1995). Our results also elaborate that as age increases quality of life measures EQ 5D and VAS decreased, though the difference was non-significant. Minocha et al. (2006) also found that when quality of life was compared between patients age (less and greater than fifty), who were suffering from IBS (Irritable Bowel Syndrome), there was no significant difference ($p>0.05$). Non-significant association of age with gastric symptoms and quality of life was an interesting finding simply, because we expect not only increase frequency and severity of different diseases but also greater impact on health with aging.

Limitations

There are few limitations of our study. The study was conducted in gastroenterology clinic and not in a community primary care unit, including patients with moderate to severe symptoms. Thus, patients suffering from mild gastric symptoms presenting to GPs were not included in our study. Our objective was to determine the relationship between gastric symptoms and quality of life with respect to age and gender; therefore, requires patients with moderate to severe gastric symptoms so that we can evaluate the aforementioned relationship. However, we still recommend more of these studies in community versus the clinical population to know the full effect of all range and severity of gastric symptoms that

Table 1. Relationship between gastric symptoms and quality of life.

GSRQ component	Generic QOL instruments	Pearson correlation	P value
UAS	EQ5D PROFILE	-0.399	<0.001
UAS	EQ5D VAS	-0.425	<0.001
LAS	EQ5D PROFILE	-0.119	0.048
LAS	EQ5D VAS	-0.088	0.124
WIND	EQ5D PROFILE	-0.316	<0.001
WIND	EQ5D VAS	-0.415	<0.001
DEFECTAION	EQ5D PROFILE	-0.272	<0.001
DEFECATION	EQ5D VAS	-0.256	<0.001

GSRQ = Gastrointestinal symptom rating questionnaire; LAS = Lower abdominal symptoms; UAS = Upper abdominal symptoms.

Table 2. Relationship between age and quality of life.

Quality of life measure	Pearson correlation	p value
EQ 5D	-0.119	0.048
EQ VAS	-0.066	0.248

EQ5D = Euroqol 5 dimension scale; EQVAS = Euroqol visual analogue scale.

Table 3. Relationship between age and gastric symptoms.

GSRQ component	Pearson correlation	p value
UAS	-0.079	0.166
LAS	-0.030	0.602
WIND	0.769	0.017
Defecation	0.054	0.350

GSRQ = Gastrointestinal symptom rating questionnaire; UAS = Upper abdominal symptoms; LAS = Lower abdominal symptoms.

Table 4. Comparison of quality of life between male and female.

Mean rank for males	Mean rank for females	p value	Gastric component/quality of life
128.334	169.494	0.02	UAS
144.367	157.048	0.205	LAS
142.516	158.487	0.112	Defecation
155.168	120.316	<0.001	EQ5D
164.162	140.724	0.020	EQVAS
Mean for males	Mean for females	p value	Gastric component/quality of life
41.098	49.632	0.005	WIND

can affect the quality of life.

CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS OF RESEARCH

We found that increase in gastric symptoms such as UAS, wind and defecation problems are associated with decrease (poor) quality of life except for LAS. We also conclude that females generally have poor quality of life than males; however, increase age was insignificantly associated with quality of life. In the line of aforementioned results, it should be recommended that further studies should explore the type of gastric symptoms that have more influence on quality of life with particular influence on age. The role of primary physicians

in the management of gastric symptoms is of prime importance. A better understanding of each patient's personal experience of the disease is important as both prevalence and severity of gastric symptoms varies with age and gender. Even mild gastric symptoms such as upper abdominal problems, bloating, nausea, vomiting, dyspepsia, constipation, flatulence can be problematic and can decrease patient's quality of life. Based on our findings, old age and females have poor gastric symptoms related quality of life. Consequently, primary care physicians should consider patient demographics of age and gender when focusing on diagnosing, implementing treatment and management plans and advising patients suffering from gastric symptoms. This will not only improve the clinical outcomes but will also increase the patient satisfaction on their quality of life and feeling of well being, further increasing the strength of the doctor-patient relationships (Fallone et al., 2004; McColl et al., 2005; Carlsson et al., 1998; Flook and Wiklund, 2007).

Our analysis would definitely provide if not the most an opportunity to the health care providers, researchers and policy makers to look and explore further the common gastric symptoms, their prevalence and impact on quality of life especially in relation to age and gender.

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