Dyspepsia and Depression, Anxiety, Stress Scales (DASS) Score

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ABSTRACT

Background: Dyspepsia is a constellation of symptoms referable to the gastroduodenal region of the upper gastrointestinal tract. Emotional disturbances are often associated with dyspepsia and have been proposed as one of the possible causes of dyspepsia. This study was aimed to evaluate the difference between the severity of dyspepsia using porto alegre dyspeptic symptoms questionnaire (P ADYQ) and emotional disturbances using depression, anxiety, stress scales (DASS).

Method: This study was a cross-sectional analytical study. All the subjects were evaluated using P ADYQ and DASS. P ADYQ is classified into four categories (no, mild, moderate and severe dyspepsia symptoms). Data was analyzed using Independent t-test and Mann-Whitney test. A p < 0.05 was considered as statistically significant.

Results: There were 90 subjects that enrolled in this study, consisted of 47 (52.2%) males and 43 (47.8%) females. Thirty three (36.7%) subjects had P ADYQ score was < 6, while it was ≥ 6 in the other 57 (63.3%) subjects. DASS scores were significantly different in subjects without dyspepsia symptoms compared to subjects with dyspepsia symptoms. There is a difference in DASS scores between subjects with different categories of dyspepsia symptoms (p < 0.05).

Conclusion: There was a difference in the severity of emotional disturbances among subjects with dyspepsia symptoms and without dyspepsia symptoms. The severity of emotional disturbances parallel with the severity of dyspepsia. Evaluation of emotional disturbances in case of dyspepsia will be helpful in the management of dyspepsia.

Keywords: dyspepsia, emotional disturbances, porto alegre dyspeptic symptoms questionnaire (P ADYQ), depression, anxiety, stress scales (DASS)

ABSTRAK

Latar belakang: Dispepsia adalah konstelasi gejala-gejala yang berasal dari daerah lambung pada saluran pencernaan bagian atas. Gangguan emosional sering berkaitan dengan dispepsia dan telah diajukan sebagai salah satu kemungkinan penyebab dispepsia. Penelitian ini bertujuan untuk mengetahui perbedaan antara tingkat keparahan dispepsia dengan menggunakan porto alegre dyspeptic symptoms questionnaire (P ADYQ) dan gangguan emosional dengan menggunakan depression, anxiety, stress scales (DASS).
Dyspepsia is a constellation of symptoms referable to the gastroduodenal region of the upper gastrointestinal tract. The dyspeptic symptoms are epigastric pain, epigastric burning, postprandial fullness, early satiation, and others, including bloating in the upper abdomen, nausea, vomiting, and belching. Dyspepsia is one of the most common disorders in medicine, with dyspeptic patients seen on a daily basis not only by gastroenterologists but also by physicians in a variety of other fields. In Indonesia, it is estimated that there are 30% cases diagnosed in general practice and 60% are found in specialist practice. Based on Indonesian Health Profile 2007, dyspepsia had already ranked 10th in the category of the most common disease in hospitalized patients, with total hospitalized patients of 34,029 or about 1.59% in 2006.

Emotional disturbances are often associated with dyspepsia and have been proposed as one of the possible causes of dyspepsia. Emotional disturbances in the form of anxiety, depression and stress were frequently seen in patients suffering from dyspepsia. Stressful life events in the patient’s social environment are also thought to be associated with the onset or exacerbation of dyspeptic symptoms. Various studies show that depression and anxiety play a role in the occurrence of functional dyspepsia and the severity of emotional disturbances is in line with the severity of dyspepsia.

This study aimed to evaluate the difference between the severity of dyspepsia using porto alegre dyspeptic symptoms questionnaire (PAdYQ) and emotional disturbances using depression, anxiety, stress scales (DASS).

**METHOD**

This study was an analytical cross-sectional study at University of North Sumatera, Medan, Indonesia from October-December 2015. A total of ninety consecutive medical students of the class of 2012 were enrolled in this study. Inclusion criteria are stated as follows: recruited in the study and signed the informed consent. The baseline information from patients’ demographics was recorded. Subsequently, all the subjects were evaluated using PAdYQ and DASS.

PAdYQ was used to evaluate dyspeptic symptoms. It consists of 11 questions of symptoms including epigastric pain, nausea, vomiting, abdominal bloating, and early satiation. Epigastric pain, nausea and abdominal bloating were evaluated by its intensity, duration, and frequency; while vomiting and early satiation were evaluated by its frequency. PAdYQ’s total scoring ranged from 0 (no symptoms) to 44 (severe symptoms). Score of each symptom was summed and classified into no dyspepsia symptoms (0-5), mild dyspepsia symptoms (6-11), moderate dyspepsia symptoms (12-22) and severe dyspepsia symptoms (22-44). Depression, anxiety, stress scales (DASS) is a 21-item self-administered, questionnaire designed to measure the magnitude of three negative emotional disturbances: depression, anxiety, and stress. The final score of each item groups (depression, anxiety, and stress) needs to be summed.
and multiplied by two. For the purpose of the study, the authors translated the PADYQ and DASS into Indonesia language.

All data were analyzed with SPSS for Windows version 22. Categorical data were described as number and continuous data as mean ± SD. Statistical analysis was done by Independent t-test and Mann-Whitney test with 95% CI. Statistical significance was set at two-tailed p < 0.05.

RESULTS

There were 90 subjects that enrolled in this study, consisted of 47 (52.2%) males and 43 (47.8%) females. The mean age of these subjects was 20.88 ± 0.7 with range 19 to 24 years old. Among 90 subjects, 33 (36.7%) subjects had PADYQ score < 6, while it was ≥ 6 in the other 57 (63.3%) subjects. Table 1 showed that 32 (56.1%) female subjects had dyspepsia symptoms, meanwhile only 25 (43.9%) male subjects had dyspepsia symptoms.

| Table 1. PADYQ category between male and female subjects |
|---------------------------------------------------------|
| Gender | PADYQ Category | No dyspepsia symptoms | Mild dyspepsia symptoms | Moderate dyspepsia symptoms | Severe dyspepsia symptoms |
|--------|----------------|------------------------|-------------------------|-----------------------------|-------------------------|
| Male   |                | 22 (66.7%)             | 15 (50%)                | 9 (40.9%)                   | 1 (20%)                 |
| Female |                | 11 (33.3%)             | 15 (50%)                | 13 (59.1%)                  | 4 (80%)                 |

Table 2. DASS scores between male and female subjects

| Gender | DASS Score | Mean | Standard Deviation |
|--------|------------|------|-------------------|
| Male   | 47 (52.2)  | 11.45| 8.08              |
| Female | 43 (47.8)  | 14.19| 6.01              |

The DASS Scores were higher in female subjects (14.19 ± 11.01) than male subjects (11.45 ± 8.08). DASS scores in cases with positive dyspepsia symptoms were higher than those with negative dyspepsia symptoms. The more severe the dyspepsia symptoms, the higher the DASS scores (Table 3).

| Table 3. Relationship between PADYQ category and DASS scores |
|-------------------------------------------------------------|
| PADYQ Category (symptoms) | DASS Score | Mean | Standard Deviation |
|---------------------------|------------|------|-------------------|
| No dyspepsia symptoms     | 33 (36.7)  | 7.64 | 5.56              |
| Mild dyspepsia symptoms   | 30 (33.3)  | 11.53| 5.89              |
| Moderate dyspepsia symptoms | 22 (24.4) | 15.63| 6.86              |
| Severe dyspepsia symptoms | 5 (5.6)    | 41.2 | 6.10              |

DASS: depression, anxiety, stress scales; PADYQ: Porto alegre dyspeptic symptoms questionnaire

Table 4. DASS scores in subjects without and with dyspepsia symptoms

| PADYQ Score                          | Without dyspepsia | With dyspepsia | p     |
|--------------------------------------|-------------------|----------------|-------|
| DASS score                           | 7.64 ± 5.56       | 15.72 ± 10.28  | 0.000 |

*p value < 0.05; DASS: depression, anxiety, stress scales; PADYQ: Porto alegre dyspeptic symptoms questionnaire

Table 4 showed that DASS scores were significantly different (p < 0.05) in subjects without dyspepsia symptoms (PADYQ < 6) compared to subjects with dyspepsia symptoms (PADYQ ≥ 6). Subjects with dyspepsia symptoms had higher mean DASS scores than those without dyspepsia symptoms, so we can conclude that subjects with dyspepsia symptoms had higher DASS scores than those without dyspepsia symptoms.

Figure 1. Comparison of PADYQ category with DASS scores

Using independent t-test, the result showed that DASS scores were also significantly different between subjects with different categories of dyspepsia symptoms (mild, moderate and severe dyspepsia symptoms). From the mean values between those categories, it showed that the more severe dyspepsia symptoms, the higher DASS scores (Figure 1).

DISCUSSION

The prevalence of dyspepsia in this study (63.3%) was higher than those of previous studies. Shah et al reported the prevalence of dyspepsia was 30.4% in India. In Taiwan, Lu et al reported that the prevalence of dyspepsia was 27.8%. Mahadewa et al reported that the prevalence of dyspepsia was 14.6% in Malaysia. This difference might be because this study was not population based study and using different criteria in diagnosis dyspepsia. The high prevalence of dyspepsia...
in medical students at University of North Sumatera needs more study to find risk factors that caused it.

The demographic pattern of this study showed the majority of the dyspepsia subjects were female. This result in line with Mahadewa et al study. Females seem to be had higher DASS score than males. This indicated that females more susceptible to develop emotional disturbances, this result was same with Haider et al and Oei et al study.5,9

The mean DASS scores in subjects without dyspepsia symptoms was 7.64, whereas in subjects with dyspepsia symptoms the DASS scores were higher than those of without dyspepsia symptoms. The difference of DASS scores between subjects with and without dyspepsia symptoms was statistically significant (p < 0.05). It seems that emotional disturbances have correlation with dyspepsia. This results in accordance with Xiaoping et al and Mahadewa et al.13,14

All of data shows that there was a difference of DASS score between different severity of dyspepsia symptoms. Moreover, the more severe the dyspepsia symptoms, the higher the DASS scores. This result was statistically significant (p < 0.05). It was shown that the severity of dyspepsia parallel with the severity of emotional disturbances. This result in line with Li et al and Mujakovic et al study.15,16

CONCLUSION

There is a difference in the severity of emotional disturbances among subjects with dyspepsia symptoms and without dyspepsia symptoms. The severity of emotional disturbances parallel with the severity of dyspepsia. Evaluation of emotional disturbances in case of dyspepsia will be helpful in the management of dyspepsia.

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