Fatigue Severity and Factors Associated with High Fatigue Levels in Korean Patients with Inflammatory Bowel Disease

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Background/Aims: Many patients with inflammatory bowel disease (IBD) often complain of fatigue. To date, only a few studies in Western countries have focused on fatigue related to IBD, and fatigue has never been specifically studied in Asian IBD patients. The aim of the present study was to investigate the fatigue level and fatigue-related factors among Korean IBD patients.

Methods: Patients in remission or with mild to moderate IBD were included. Fatigue was assessed using the Functional Assessment of Chronic Illness Therapy-Fatigue and the Brief Fatigue Inventory. Corresponding healthy controls (HCs) also completed both fatigue questionnaires.

Results: Sixty patients with Crohn disease and 68 patients with ulcerative colitis (UC) were eligible for analysis. The comparison group consisted of 92 HCs. Compared with the HCs, both IBD groups were associated with greater levels of fatigue (p<0.001). Factors influencing the fatigue score in UC patients included anemia and a high erythrocyte sedimentation rate (ESR).

Conclusions: Greater levels of fatigue were detected in Korean IBD patients compared with HCs. Anemia and ESR were determinants of fatigue in UC patients. Physicians need to be aware of fatigue as one of the important symptoms of IBD to better understand the impact of fatigue on health-related quality of life. (Gut Liver 2014;8:148-153)

Key Words: Fatigue; Inflammatory bowel diseases; Crohn disease; Colitis, ulcerative

INTRODUCTION

Fatigue in chronic disease is defined as persistent, overwhelming sense of tiredness, weakness or exhaustion resulting in a decreased capacity for physical and/or mental work. Fatigue is not simply a part of a psychological comorbidity or illness behavior, but should be considered as a unique entity. Fatigue is one of the most important symptoms of many chronic diseases (i.e., primary biliary cirrhosis, rheumatoid arthritis, ankylosing spondylitis, systemic lupus, sclerosing cholangitis, psoriatic arthritis, and multiple sclerosis). 1-7

Inflammatory bowel disease (IBD), which is a combined disease of ulcerative colitis (UC) and Crohn disease (CD), is a chronic inflammatory disorder of the gastrointestinal tract. IBD shows a high incidence in young adults, and results in a lifelong influence on these patients. 8 Although the main clinical manifestations of IBD are known as abdominal pain and diarrhea caused by intestinal inflammation, many complain of systemic symptoms such as fatigue which can have a negative effect on the patient's physical well-being, functional status, and quality of life. 9 Mitchell et al. 10 demonstrated that fatigue as along with primary bowel symptoms were common in IBD patients. Also, it was reported in Norway recently that chronic fatigue is more frequent in patients with IBD than in healthy controls (HC) and is related to decreased quality of life. 11,12 IBD associated fatigue is not only be severe but can also be the most debilitating part of the disease in some patients.

Various scales have been investigated and validated in order to determine patient perception and the severity of fatigue. 13,14 Recently, Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) has been validated for the IBD population in the United States. 15 Also, the Korean version of the Brief Fatigue Inventory (BFI) has been validated for the general population as well as for patients with cancer in Korea. 16,17

Over the last decade, treatment options for patients with IBD have improved dramatically, with a huge improvement in...
the management of intestinal symptoms. However, subjective complaints by patients such as fatigue have been neglected and so its management has not been established. To date, only a few Western studies have focused on fatigue related to IBD. Although the incidence of IBD in Asia has increased rapidly in recent years, the prevalence of fatigue in Asian IBD patients has never been specifically studied. Thus, the primary aim of this study was to estimate the level of fatigue in Korean patients with IBD compared to those in HCs and second, to investigate the determinants of fatigue level.

MATERIALS AND METHODS

1. Subjects

This study was conducted in the Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea from June 2012 to October 2012. Patients over 18 years of age and diagnosed with UC or CD based on standard endoscopic, radiographic, and histological criteria were included in this study. Activity of UC and CD was assessed by the Mayo score and Crohn’s Disease Activity Index (CDAI), respectively. CD patients with CDAI <150, 150 to 220, 220 to 450, >450 and UC patients with the Mayo score 0 to 2, 2 to 5, 5 to 10, 10 to 11, 11 to 12 were considered to have remission, mild, moderate, and severe disease activities, respectively. Patients who were in remission or with mild to moderate disease activity were eligible for inclusion in this study. Patients with cognitive impairment, who did not consent to informed consent, or those who were considered by the investigator as not complying with the study procedures were excluded from the study. The data for HCs were collected from office workers without disease during the study period.

2. Clinical and sociodemographic data

Information on sociodemographic variables including age, gender, smoking habits, and body mass index were collected during history taking. Smoking history was categorized into two groups, current smoker and ex-smoker/never smoker. The data for clinical status, symptoms, and current medication use were obtained from disease activity indexes (Mayo score, CDAI) and medical records.

Information regarding fatigue was collected with the FACIT-F and BFI. The questionnaires were self-administered by the patients. Patients filled out the questionnaires in peace and quiet at the hospital outpatient clinic.

Disease phenotype was classified according to the Montreal Classification for CD patients. UC patients were classified into three subgroups: proctitis, left-sided colitis, and extensive colitis. Erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) level, hemoglobin (Hb) level, and reticulocyte distribution width (RDW) were assessed at the time when the fatigue level was estimated. Anemia was defined as Hb <12.0 g/dL for nonpregnant women and Hb <13.0 g/dL for men (World Health Organization definition).

3. Assessment of fatigue

FACIT instrument is a comprehensive compilation of questions that measure health-related quality of life in patients with chronic illnesses. FACIT-F is a subscale of the general questionnaire, the FACIT-G. It comprises 13 questions, the responses to which are each recorded on a 5-point Likert scale. Scores range from 0 to 52, with lower scores representing greater fatigue.

The BFI consists of nine items on a single page. Fatigue and its interference with daily living are measured using numeric scales from 0 to 10. Three items ask subjects to describe their fatigue “now,” at its usual level (“usual” fatigue), and at its worst level (“worst” fatigue) during the previous 24 hours. The descriptions range from “no fatigue” to “fatigue as bad as you can imagine.” Six items ask how much fatigue has interfered with aspects of their life during the previous 24 hours, with scales ranging from 0 (did not interfere) to 10 (completely interfere). These aspects include general activity, mood, walking ability, normal work (both work outside of the home and daily chores), relationships with other people, and enjoyment of life. The global BFI score is calculated as the mean of the nine items. Validity and reliability of the Korean version of the BFI have been established previously.

4. Statistical analysis

Chi-square tests, t-tests for parametric variables and the Mann-Whitney U test for nonparametric variables were used to evaluate the differences in clinical characteristics and fatigue levels between the diagnostic groups. To extract sociodemographic and clinical factors related to fatigue scores, we used binary variables and otherwise bivariate correlation analysis. Linear regression analysis was performed using the enter method to evaluate the effects of demographic and clinical data (independent variables) extracted from the bivariate correlation analysis on the FACIT-F and global BFI (dependent variables). Data were analyzed separately in unadjusted and adjusted linear regression models. All tests were 2-sided and with a 5% significance level. All statistics were performed using the Predictive Analytics Software, PASW version 18.0 (IBM Co., Armonk, NY, USA).

5. Ethics

The study was performed according to the principles of Declaration of Helsinki. The Institutional Review Board of Kangbuk Samsung Hospital approved this study, and informed consent was obtained from all participants.

RESULTS

1. Demographic and disease characteristics

The demographic and disease characteristics of IBD patients are presented in Table 1. There were no significant differences...