

## **Fatigue – an important symptom that can be assessed**

### **Zmęczenie – istotny objaw, który można ocenić**

**Michał Świątczak, Grzegorz Raczak, Ludmiła Daniłowicz-Szymanowicz**

II Department of Cardiology and Electrotherapy, Medical University of Gdansk, Poland

#### **Abstract**

Fatigue is a common, nonspecific symptom that often impairs patients' quality of life. Due to its non-specific nature, fatigue as a symptom is often underestimated, which is a mistake, because it may be the first symptom of serious illness. Fatigue by the time of occurrence can be divided into chronic and transient. The most common causes of transient fatigue include overwork, lack of sleep, and harmless infections. Chronic fatigue as a symptom accompanies a huge number of diseases, often overtaking the development of other symptoms. Due to a large number of overlapping diseases and symptoms, the precise assessment of fatigue is a challenge, particularly in the geriatric population. Chronic fatigue in older patients develops both based on the patient's underlying disease and possible psychological or neurological problems. Assessment of fatigue severity, with the use of appropriately prepared scales, provides us with important additional information about the patient's clinical condition. *Geriatrics 2020; 14: 65-69.*

*Keywords: fatigue assessment, fatigue, scale, elderly*

#### **Streszczenie**

Zmęczenie jest objawem, który często pogarsza jakość życia pacjentów. Ze względu na niespecyficzny charakter zmęczenie jako objaw jest często bagatelizowane, co jest błędem z klinicznego punktu widzenia, ponieważ może być pierwszym sygnałem poważnej choroby. Zmęczenie według czasu wystąpienia można podzielić na przewlekłe i przemijające. Najczęstsze przyczyny przemijającego zmęczenia to przepracowanie, brak snu i nieszkodliwe infekcje. Przewlekłe zmęczenie jako objaw towarzyszy ogromnej liczbie chorób, często wyprzedzając rozwój innych dolegliwości. Z powodu dużej liczby nakładających się chorób i symptomów prawidłowe oszacowanie zmęczenia, zwłaszcza w populacji geriatrycznej, stanowi wyzwanie. Przewlekłe zmęczenie w starszej populacji rozwija się zarówno na podłożu choroby podstawowej pacjenta, jak i często występujących problemów psychologicznych lub neurologicznych. Prawidłowo przeprowadzona ocena nasilenia zmęczenia dostarcza nam istotnych dodatkowych informacji na temat stanu klinicznego pacjenta. *Geriatrics 2020; 14: 65-69.*

*Słowa kluczowe: zmęczenie, ocena zmęczenia, skala, osoby starsze*

#### **Introduction**

Fatigue is a common, nonspecific symptom that often impairs patients' quality of life. Due to its non-specific nature, fatigue as a symptom is often underestimated, which is a mistake, because it may be the first symptom of serious illness. Assessment of fatigue is difficult, particularly in the elderly population, due to the frequent co-occurrence of many diseases and the difficulty in distinguishing whether it is the result of the underlying disease or the mental state of a geriatric patient.

Our paper aims to present the review of fatigue as an important clinical problem with special attention to elderly patients and to discuss simple, modern, minimally invasive, and effective methods of assessing fatigue among patients, which could significantly help for the objectification of the clinical picture of patients in clinical practice.

#### **Causes of fatigue**

Fatigue by the time of occurrence can be divided into chronic and transient. The most common causes

of transient fatigue include overwork, lack of sleep, and harmless infections. Chronic fatigue as a symptom accompanies a huge number of diseases, often overtaking the development of other symptoms. The feeling of severe, chronic fatigue is reported by over 50% of patients with heart failure [1]. Among patients after stroke, more than 70% suffer from fatigue [2]. Chronic fatigue is also reported by up to 70% of patients with sarcoidosis [3]. In the case of hereditary hemochromatosis (HH), severe fatigue is one of the first symptoms of the disease [4], however, no studies are determining its exact prevalence. A strong feeling of chronic fatigue develops in the course of major depressive disorder, it is estimated that even more than 90% of people suffering from this mental illness suffer from chronic fatigue [5]. Strong fatigue is also accompanied by up to 50% of patients with Parkinson's disease [6]. Another cause of fatigue, especially in the older population, is Rheumatoid Arthritis, but the cause of its development is not fully understood [7]. Fatigue is also found in up to 80% of patients with multiple sclerosis [8]. Cancer, e.g. breast cancer [9], is accompanied by so-called cancer-related fatigue accompanying about 30% of long-term cancer survivors and even 90% of patients during treatment and at the end of life [10].

**Fatigue in the elderly population.** Due to a large number of overlapping diseases and symptoms, the correct assessment of fatigue among the geriatric population is a challenge. Chronic fatigue in the older population develops both based on the patient's underlying disease and possible psychological or neurological problems. The incidence of moderate or severe fatigue in the geriatric population is estimated at up to 50%, which is higher in patients under long-term medical care [11]. The occurrence of fatigue during everyday activities among this group of patients is often associated with a decrease in their physical activity, which is a factor increasing mortality among older people [12]. Besides, limiting physical activity leads to a decrease in muscle endurance, which results in a worse balance, increasing the risk of falls, a higher concentration of inflammatory mediators, as well as greater activity of catabolic processes [13]. Fatigue among geriatric patients is presented as an indicator of frailty and an exponent of the aging process [14].

## Assessment of fatigue

A properly conducted assessment of fatigue severity provides us with important additional information about the patient's clinical condition. Performed regularly at the beginning, during, and at the end of the treatment of some diseases, it can also show the effectiveness of the treatment. So far, many scales have been created to analyze the degree of fatigue among patients with a variety of ailments, we would like to present several of them.

**Fatigue Assessment Scale (FAS; Table I)** is a 10-item scale used to assess the overall severity of fatigue among patients, it does not apply to specific time intervals, and the efficiency of this scale has been presented in many studies [9,15,16]. The reliability of this instrument is high (Cronbach's  $\alpha = 90$ ). The questions can be obtained from 1 to 5: 1 = never, 2 = sometimes, 3 = regularly, 4 = often, and 5 = always, it must be remembered that in case of questions 4 and 10, use a score in the opposite scheme: 5 = never, 4 = sometimes, 3 = regularly, 2 = often, and 1 = always. In total, you can get from 10 to 50 points. In a situation when the patient obtains a maximum of 21 points, we are not talking about fatigue, when he receives 22 or more points, we are talking about substantial fatigue, we distinguish two subgroups here: fatigue – scores 22-34 and extreme fatigue – scores  $\geq 35$ .

**Chalder Fatigue Scale (CFQ; Table II)** is an 11-item scale assessing the severity of fatigue during the last month compared to the previous state. CFQ allows the assessment of physical (measured by items 1-7) and mental (measured by items 8-11) fatigue [18]. There are two ways to evaluate answers given on this scale: binary scoring method (less than usual – 0, no more than usual – 1, more than usual – 2, much more than usual – 3) and Linkert scoring method (less than usual – 0, no more than usual – 1, more than usual – 2, much more than usual – 3), in the case of the first method the range of points possible to obtain is 0-11, in the second the range is 0-33 points [18]. A higher score reflects greater fatigue. The reliability of this instrument is high and ranges from 0.9 for the Linkert scoring method and 0.83 for the binary scoring method [19].

**Fatigue Severity Scale (FSS; Table III)** is a 9-item scale assessing the severity of the patient's fatigue over the past week. We provide answers on a scale of 1-7, where 1 is "Strongly disagree" and 7 "strongly agree", and the final result is the sum of points received. A higher score reflects greater fatigue. Swiss analysis

Table I. Fatigue Assessment Scale [17]

| Fatigue Assessment Scale (FAS)                          |       |           |           |       |        |
|---|-------|-----------|-----------|-------|--------|
|   | NEVER | SOMETIMES | REGULARLY | OFTEN | ALWAYS |
| I am bothered by fatigue                                |       |           |           |       |        |
| I get tired very quickly                                |       |           |           |       |        |
| I don't do much during the day                          |       |           |           |       |        |
| I have enough energy for everyday life                  |       |           |           |       |        |
| Physically, I feel exhausted                            |       |           |           |       |        |
| I have problems to start things                         |       |           |           |       |        |
| I have problems to think clearly                        |       |           |           |       |        |
| I feel no desire to do anything                         |       |           |           |       |        |
| Mentally, I feel exhausted                              |       |           |           |       |        |
| When I am doing something, I can concentrate quite well |       |           |           |       |        |

Table II. Chalder Fatigue Scale [20]

| Chalder Fatigue Scale (CFQ 11)                     |                   |                     |                  |                       |
|--|-------------------|---------------------|------------------|-----------------------|
|  | Less than usual   | No more than usual  | More than usual  | Much more than usual  |
| Do you have problems with tiredness?               |                   |                     |                  |                       |
| Do you need to rest more?                          |                   |                     |                  |                       |
| Do you feel sleepy or drowsy?                      |                   |                     |                  |                       |
| Do you have problems starting things?              |                   |                     |                  |                       |
| Do you lack energy?                                |                   |                     |                  |                       |
| Do you have less strength in your muscles?         |                   |                     |                  |                       |
| Do you feel weak?                                  |                   |                     |                  |                       |
| Do you have difficulties concentrating?            |                   |                     |                  |                       |
| Do you make slips of the tongue when speaking?     |                   |                     |                  |                       |
| Do you find more difficult to find the right word? |                   |                     |                  |                       |
|  | Better than usual | No worse than usual | Worse than usual | Much worse than usual |
| How is your memory?                                |                   |                     |                  |                       |

Table III. Fatigue Severity Scale [21]

| Fatigue Severity Scale (FSS)   |                 |   |   |   |   |   |   |
|--|-----------------|---|---|---|---|---|---|
|  | Agreement Score |   |   |   |   |   |   |
| My motivation is lower when I am fatigued                                | 1               | 2 | 3 | 4 | 5 | 6 | 7 |
| Exercise brings on my fatigue  | 1               | 2 | 3 | 4 | 5 | 6 | 7 |
| I am easily fatigued   | 1               | 2 | 3 | 4 | 5 | 6 | 7 |
| Fatigue interferes with my physical functioning                          | 1               | 2 | 3 | 4 | 5 | 6 | 7 |
| Fatigue causes frequent problems for me                                  | 1               | 2 | 3 | 4 | 5 | 6 | 7 |
| My fatigue prevents sustained physical functioning                       | 1               | 2 | 3 | 4 | 5 | 6 | 7 |
| Fatigue interferes with carrying out certain duties and responsibilities | 1               | 2 | 3 | 4 | 5 | 6 | 7 |
| Fatigue is among my three most disabling symptoms                        | 1               | 2 | 3 | 4 | 5 | 6 | 7 |
| Fatigue interferes with my work, family or social life                   | 1               | 2 | 3 | 4 | 5 | 6 | 7 |

showed an excellent internal consistency and reliability of FSS with an average Cronbach's  $\alpha$  coefficient of 0.93 [21].

**Multidimensional Fatigue Inventory (MFI)** is a 20-item scale that covers 5 domains of fatigue: General Fatigue, Physical Fatigue, Mental Fatigue, Reduced Motivation, and Reduced Activity. MFI has good internal consistency and reliability with an average Cronbach's  $\alpha$  coefficient of 0.84 [22]. The patient answers questions on a 5-point scale: from 1 ("yes, this is true") to 5 ("no, this is no true"), scores range from 4 (absence of fatigue) to 20 (maximum fatigue) [23]. MFI can be obtained from the developers by e-mail: e.m.smets@amc.uva.nl.

### The usefulness of different fatigue scales in clinical practice

The fatigue assessment at first contact with the patient seems to be very important from the clinical point of view. This will allow doctors to objectify the clinical features of the patient. What is more, regularly carried out control assessment of the severity of fatigue can help to assess the impact of treatment on the level of fatigue and indirectly inform the doctors about the effectiveness of therapy. The scales presented above are successfully used in the clinical assessment of patients suffering from various types of diseases. For instance, FAS is well-known in the fatigue analysis among patients with sarcoidosis [3,15,16,24]. Additionally, it is used in neurology [25, 26], cardiology [25, 27], as well as oncology [9], and other fields of medicine. CFQ is effectively used among patients with Chronic Fatigue Syndrome (CFS) [28], patients with autoimmune diseases such as systemic lupus erythematosus (SLE) [29], and Primary Sjogren's Syndrome [30] allowing for differentiating reliably between clinical and non-clinical conditions. FSS was used to assess fatigue among patients with Multiple Sclerosis (SM), besides it is recommended by Ad Hoc Committee among SLE patients [31]. MFI was successfully used in the assessment of fatigue in patients with Parkinson's disease [6] [21], SLE [31], and many other diseases. The usefulness of fatigue scales among patients with HH, however not

very popular so far, could be very interesting from the practical point of view. HH occurs with a frequency of 1 – 2 for 500 people [4] and leads to excessive iron absorption, its accumulation in different organs, including heart, and their damage. One of the early symptoms noticed by patients with HH is the feeling of severe, chronic fatigue, which very often significantly decreases the quality of life of these patients. An example of the use of fatigue assessment scales among patients with HH was presented in our previous work in which we used 3 scales: FAS, CFQ, and FSS in the clinical evaluation of the effects of venesections therapy in a 42-year-old man with HH [32]. We observed a spectacular decrease in fatigue during 6 months of venesections therapy and an improvement in some of the echocardiographic parameters. However, further studies are needed to confirm and standardize the fatigue assessment in this group of patients.

### Summary

Fatigue is a very common symptom occurring in many patients, including the elderly population. This symptom can be associated with many illnesses regardless of their severity. Currently, there are many simple, fast, and effective tools in the form of scales for the comprehensive, multidimensional assessment of the degree of fatigue among patients. The use of fatigue assessing scales can be helpful in the everyday clinical practice of doctors of various specialties in objectifying this symptom, and sometimes in monitoring the effects of treatment.

Conflict of interest

Brak/None

Correspondence address

✉ Ludmiła Daniłowicz-Szymanowicz MD, Ph. D.

II Department of Cardiology

Medical University of Gdańsk

7, Dębinki St.; 80-211, Gdańsk, Poland

☎ (+48 58) 349 39 10

✉ ludwik@gumed.edu.pl

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