

Restless Legs Syndrome in Nursing Practice

Zespół niespokojnych nóg w praktyce pielęgniarstwa

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Abstract

Restless legs syndrome (RLS/WED) is one of the most important causes of sleep disorders. It is a sensorimotor neurological dysfunction, very common, and at the same time too rarely diagnosed. It is characterized by the compulsion to move the limbs, combined with unpleasant sensations located “deep inside the lower limbs” that subside after taking physical activity and stopping rest. Not all patients require pharmacological treatment. In a situation where the symptoms are not very severe, observation and non-pharmacological activities are sufficient. Other patients with symptoms that hinder everyday life require pharmacological treatment. Depending on the severity of the symptoms, the treatment may be temporary and or continuous. Due to the fact that the restless legs syndrome may occur in various diseases (Parkinson's disease, in dialysis patients, patients with mental and cardiological diseases, pregnant women), it is important for nurses of different specializations to know the issues of symptoms, coping with them, rules for the use of the recommended treatment, which in the case of RLS may be associated with many adverse reactions. Nursing care is extremely important in the diagnostic and therapeutic process of restless legs syndrome. (JNPN 2018;7(4):166–172)

Key Words: restless legs syndrome, sleep disorders, nursing education

Streszczenie

Zespół niespokojnych nóg (choroba Willisa-Ekboma, Restless Legs Syndrome — ang. RLS/WED) jest jedną z ważniejszych przyczyn zaburzeń snu. Jest sensomotoryczną dysfunkcją neurologiczną, bardzo powszechną, a jednocześnie zbyt rzadko diagnozowaną. Charakteryzuje się przymusem poruszania kończynami, połączonym z nieprzyjemnymi odczuciami usytuowanymi „głęboko wewnątrz kończyn dolnych” ustępującymi po podjęciu aktywności fizycznej i zaprzestaniu odpoczynku. Nie wszyscy pacjenci wymagają leczenia farmakologicznego. W sytuacji, gdy objawy nie są bardzo nasilone, wystarcza jedynie obserwacja i działania nefarmakologiczne. Inni chorzy, z objawami utrudniającymi codzienne życie, wymagają podjęcia leczenia farmakologicznego. W zależności od nasilenia objawów, leczenie może być tymczasowe i doraźne lub ciągłe. Z uwagi na fakt, iż zespół niespokojnych nóg może występować w różnych chorobach (choroba Parkinsona, pacjenci dializowani, pacjenci z chorobami psychicznymi i kardiologicznymi, kobiety w ciąży), ważne jest, aby pielęgniarki o różnych specjalizacjach znały zagadnienia dotyczące objawów, radzenia sobie z nimi, zasady stosowania zalecanego leczenia, które w przypadku RLS może się wiązać z wieloma działaniami niepożądanymi. Opieka pielęgniarstwa jest niezwykle ważna w procesie diagnostyczno-terapeutycznym zespołu niespokojnych nóg. (PNN 2018;7(4):166–172)

Słowa kluczowe: zespół niespokojnych nóg, zaburzenia snu, edukacja pielęgniarstwa

Introduction

Restless legs syndrome (RLS) is a neurological disease. The symptoms appear at rest, in the evening and at night, making it difficult or impossible to fall asleep. It has its

consequences is a disturbed sleep that does not bring rest, which may result in excessive daytime sleepiness and reduced concentration. The symptoms may regress to some extent as a result of movement [1,2]. Despite the

fact that the disease is widespread, it is still too seldom diagnosed [3].

Restless legs syndrome was described in the 17th century by an English doctor, Thomas Willis in his work “The London Practice of Physic”. In 1945, a Swedish neurologist Karl-Axel Ekbom described 34 cases of the disease, all clinical features were presented, and the term “restless legs syndrome” was also used for the first time. It is here that the current term for the disease that is being promoted, the Willis-Ekbom Disease (WED) originates from. In the eighties of the twentieth century, a Turkish neurologist Akpinar discovered that the symptoms of RLS were suppressed due to dopaminergic treatment, which allowed the development of therapeutic schemes [4,5]. Restless legs syndrome is associated with a significant deterioration of the sleep quality of patients and of their quality of life, depending on the severity of symptoms, it hinders normal functioning, including such activities as going to the cinema, family meetings, travelling or sleeping [6,7].

This article presents basic information on clinical features, diagnostic methods, pathomechanisms and therapy of restless legs syndrome. Particular attention was paid to the role of the nursing team, in patient’s education and supervision over the course of therapy.

Clinical Image and Diagnostic Criteria of Restless Legs Syndrome

The clinical image of the restless legs syndrome consists of the following symptoms: compulsion to move the lower limbs, unpleasant sensory sensations in the lower limbs, appearance or worsening of symptoms in the evening or night hours and during rest, regression of symptoms under the influence of motion. The undesirable and uncomfortable sensations usually involve the lower legs as well as feet. Those symptoms may also include other body areas (rarely) — the proximal part of the lower limbs, upper limbs or trunk. The intensity of sensory experiences is very variable individually — from an irritating tingling to intense pain sensations. The form of descriptions of these sensations by patients is extremely rich: tingling, scratching, wringing, scraping and burning sensation. Often one can also find the statement “I have strange sensations in my legs, I do not know how to describe them...”. The occurrence of symptoms is favoured by rest, relaxation, both physical and mental. When the patient starts to move, the symptoms go down or disappear to return almost immediately after stopping physical activity. It should be noted that limb movements during the waking period in patients with RLS are not (mostly) involuntary — patients perform them consciously in order to feel relief

[6,7]. In 2003, the International Restless Legs Syndrome Study Group (IRLSSG) published the criteria for the diagnosis of restless legs syndrome. Symptoms were divided into three groups: main, additional and co-occurring criteria, which were updated in 2014 [8,9]. Restless legs syndrome occurs in two forms: idiopathic and secondary. The idiopathic form is characterized by a positive family history. Research suggests that RLS is an autosomal dominant disease. Clinically, the idiopathic form is characterized, apart from a positive family history, by earlier commencement and slower progress [10–13]. In turn, the occurrence of a secondary restless legs syndrome may take place in three clinical situations: in iron deficiency, end-stage chronic renal disease and pregnancy [15–17]. The most common reason for secondary RLS is iron deficiency. Symptoms of significant RLS were found in 24% of patients with iron deficiency anemia and in 7 — 18% of regular blood donors [14–16]. Clinical tests show that the severity of disease symptoms is negatively correlated with iron levels, and iron supplementation brings relief to patients [17]. Restless legs syndrome is a common problem in the population of patients with end-stage renal disease, particularly among patients on dialysis. RLS symptoms can be found in 25% of dialysis patients [18]. Compared to spontaneous RLS, in dialysis patients it progresses more rapidly (the symptoms progress faster), the complaints are more severe, the sleep disorders associated with it are more severe and the doses of medication necessary to achieve satisfactory improvement are higher [19]. RLS among dialysis patients may increase the risk of cardiovascular disease and mortality. Relatively often, RLS symptoms appear in pregnant women. Interesting is the fact that the symptoms usually appear only in the third trimester and disappear after childbirth. There is a hypothesis that the appearance of restless legs syndrome may suggest a predisposition to this disease at a later age. The research shows that up to 26% of women experience restless legs syndrome during pregnancy. It should be added that the study conducted by Manconi M. et al. proved that the vast majority of RLS cases which had occurred during pregnancy, had disappeared spontaneously after the birth of a child [20,21]. One should also notice the possibility of drug-induced restless legs syndrome. Based on the analysis of casuistic reports, it can be assumed that an increased risk of restless legs syndrome is associated with the use of drugs that enter into antagonistic interactions with dopamine receptors — particularly neuroleptic and antiemetic drugs.

Epidemiology

The research clearly shows that women suffer twice as often as men. It has also been observed that people

living in Asian countries suffer much less often, as the incidence rate in the general population does not exceed 2% there, compared to the Caucasians, in which the incidence of restless legs syndrome ranges from 5% to 15% [22].

The research shows that restless legs syndrome is still too rarely diagnosed in spite of the large-scale campaign for publicizing the disease, and therefore it is not treated in a way that improves the quality of patients' lives [17]. Within the five-year period, primary care physicians recognized only 0.25% of patients reporting with RLS symptoms [21,23]. Similar data were obtained from the RLS epidemiology, symptoms and treatment test (REST). Among patients who experienced RLS symptoms at least twice a week, only 16% heard the correct diagnosis and, as a result, they could be treated in accordance with applicable standards. All persons reported a deterioration of their quality of life to a moderate or significant degree [7,24]. Research conducted over the last decade proved that among the population of Northern Europe and the United States the prevalence of RLS varied from 5 to 15%, where the vast majority of those suffering from symptoms of the disease were women. These studies also show that the incidence of restless legs syndrome increases with age, and the peak of the incidence falls on the age of over thirty and fifty years [17]. The group of RLS increased risk occurrence includes the following groups of patients: pregnant women, patients with end-stage renal failure, in particular the dialyzed, patients with a positive family history, patients with iron deficiency anemia, those who donate blood frequently, patients with stomach surgeries, children with hyperactivity [24–29].

Diagnosis of Restless Legs Syndrome

The diagnosis of restless legs syndrome is based on the results of physical and subjective examination — so far no unambiguous biomarker of this disease has been identified. The diagnostic process should include:

- an interview, during which the occurrence of essential criteria for restless legs syndrome, the frequency of symptoms occurrence and the scale of their impact on the functioning of the patient are established,
- physical examination, carried out to determine whether there are symptoms suggesting that the patient's problems result from another disease (e.g. symptoms of polyneuropathy, osteoarthritis or venous circulation disorders in the lower limbs). In a patient with a primary restless legs syndrome, a neurological examination should not show focal features of damage to the nervous system. On the basis of these two elements, it should be

determined whether we are dealing with restless legs syndrome (the presence of basic diagnostic criteria, no symptoms of other diseases) and what its severity is (measured by the frequency of symptoms and their impact on patient's functioning) [7].

In patients who will be diagnosed with restless legs syndrome, a laboratory evaluation of iron metabolism should be performed (in order to rule out iron deficiency as the cause of secondary RLS) and renal function (to rule out any undiagnosed chronic kidney disease that is the cause of secondary RLS) [7].

Restless Legs Syndrome Treatment

The treatment of RLS is recommended in patients in whom symptoms occur frequently (at least 2–3 times a week) and significantly impair the functioning of the patient (impaired night's sleep or daytime functioning) [17]. In patients diagnosed with RLS in the course of iron deficiency, supplementation should be applied first [24]. The first-line drugs for the treatment of restless legs syndrome are dopamine receptor agonists. The patient should be informed about possible (in most cases, transient) side effects: nausea, daytime sleepiness, decreases in blood pressure [25]. An important side effect of this group of drugs is the occurrence of dopaminergic dysregulation syndrome. It is a disorder manifested by behavioral changes: a tendency to excessive shopping, gambling. The second group of drugs used in the first line treatment are alpha2delta subunit ligands of neuronal calcium channel. Gabapentin and pregabalin are available in Poland. A complication specific to the treatment of restless legs syndrome is the so-called augmentation — a phenomenon of paradoxical intensification of the symptoms of the disease in the course of its treatment. Augmentation most often develops in patients treated with dopaminergics. After the period of initial improvement, the patient begins to report that the symptoms have intensified again, to a level that exceeds that before the therapy [25,30]. Non-pharmacological treatment of RLS is valid in every case. Non-pharmacological intervention should include modification of the patient's lifestyle: compliance with the rules of sleep hygiene, limiting the consumption of products containing stimulants (e.g. caffeine), involvement in activities requiring focusing during the time of symptom occurrence. Epidemiological data suggest that lifestyle modifications — quitting smoking, weight loss and lengthening time spent on physical activity may positively affect the risk of the disease and its course [25, 31].

Clinical Consequences of Restless Legs Syndrome

Restless legs syndrome is one of the major causes of sleep disturbance. Because of the compulsion to move the legs, effective sleep is impossible. Studies have shown that RLS, which accompanies multiple sclerosis, significantly worsens the quality of sleep, shortens the duration of sleep, and lowers its efficiency [25,26]. Selected studies show the relationship between restless legs syndrome and the deterioration of the mental state of people suffering from this disease [32–36]. Untreated sleep disorders, in the course of restless legs syndrome, may be the cause of cardiovascular disease, hypertension and may even lead to stroke. Both insomnia and sleep apnea may cause high blood pressure, increased heart rate and vascular diseases [37,38]. Restless legs syndrome can have a significant impact on the quality of life of patients. The comfort of life deteriorates when RLS accompanies such diseases as diabetes, hypertension, depression and anxiety disorders, as well as osteoporosis [37–39].

The Role of the Nurse and Midwife in the Care of the Patient with Restless Legs Syndrome

A nurse or midwife plays an important role in the care of a patient with restless legs syndrome at all stages: diagnosis, treatment and the course of the disease [40].

When collecting a nursing interview, attention should be paid to the quality of sleep. A simple question (“How do you sleep?”, “Does something interfere with falling asleep?”) may provoke the patient to tell about the symptoms of the syndrome, even if they are not the reason for contacting the health service. Suspicion of restless legs syndrome should be verified by collecting data on the basic criteria for the diagnosis of the syndrome (the presence of feelings of compulsion to move the limbs and unpleasant sensations within the legs, the occurrence of symptoms in the evening and night hours, the occurrence of symptoms at rest, regression of symptoms due to movement). Particular vigilance should be paid by nurses at wards dedicated to patients from the population particularly exposed to the occurrence of restless legs syndrome: nephrological, dialysis, hematology as well as by midwives. After confirming the existence of RLS diagnosis criteria, the patient should be advised to consult a doctor, advised on the laboratory control of iron metabolism, and be warned against using healing agents of undocumented effectiveness [40]. After establishing the diagnosis, the nurse or midwife participates in the patient’s education, explaining the nature of the disease (a chronic illness, requiring long-term therapy, however, not exposing the patient to death or permanent disability). Particularly important is the

role of midwives who, when taking care of pregnant women with restless legs syndrome, should inform them about the transient nature of the disorder and of the lack of proven negative impact of RLS on the course of pregnancy and childbirth as well as on the health of the child [28,29,40]. In terms of therapeutic activities, the nurse should instruct the patient about non-pharmacological methods of treatment: compliance with the rules of sleep hygiene. It is important for the patients to go to sleep at regular hours, if possible. Conditions must also help to fall asleep. In addition, the nurse provides the patient with information regarding avoiding stimulants, reducing body weight and undertaking regular physical activities as a part of non-pharmacological therapy. The patient ought to be informed about the fact that such substances as caffeine, nicotine, alcohol or other psychoactive ones increase the symptoms of restless legs syndrome. The patient must know about the need to set aside those substances, or at least limit their use. Equally important is education aimed at discussing the principles of practicing physical activity that alleviates the RLS symptoms. Patients must know that any activity results in alleviation of symptoms which disappear under the influence of lower limb movement. Patients should be advised to run, cycle, and perform other activities related to the movement of the lower limbs [40].

It is also important for the nurse to determine whether there are side effects associated with the use of pharmacotherapy — with particular emphasis on the dopaminergic dysregulation and augmentation syndrome. The accuracy of compliance with medical recommendations should also be verified [40].

An element of education also consists in teaching the patient to recognize the recurrence of disease symptoms. It is important for patients to be able to relate even very weak, although unpleasant sensations located in the lower limbs, to the relapse of the disease. It is also extremely important that patients should be aware of their illness, how it can affect their lives, significantly reducing its quality. It is also necessary to know the symptoms of the disease, as well as the diagnostic criteria developed by IRLLSG [40].

Maternity Wards

Restless legs syndrome is a disease which more often affects women, so it is them who most often need help. The situation is not improved by the fact that the symptoms intensify during pregnancy, and often, but not always, are eased after childbirth. It is estimated that the frequency of restless legs syndrome affects up to 47% of pregnant women. It is worth ensuring that there is a lot of space in gynecological-obstetric wards, so that the

women suffering from RLS could alleviate symptoms through frequent walks, when pharmacotherapy does not bring the desired relief. In addition, nurses and midwives working in such wards should not hinder or prohibit contacts with the family. Pregnant women happen to suffer from insomnia or cramps in the leg muscles during sleep. It is worth ensuring that such women are provided with the right conditions to sleep. The room can be ventilated and patient's bed made, and if possible, the bed linen can be changed. In order to facilitate falling asleep, silence in the ward should be ensured and patients should be advised not to eat large meals before bedtime. It is only when these methods fail to be effective that pharmacological means should be considered in order to facilitate falling a sleep. Symptoms of the disease intensify considerably in the third trimester of pregnancy, and research shows that women who gave birth on time have significantly lower sleep disorders than women whose babies were born before the appointed date. That is when women most need the support and help which can be given by nurses. A conversation alone can bring positive results in the form of self-confidence increase. The patient should be ensured that a properly selected pharmacotherapy will increase the quality of her life by reducing the severity or total elimination of disease symptoms. It is also worth mentioning that regular control is required at the neurological clinic in order to prevent the recurrence of symptoms of restless legs syndrome [28,29,40].

Nursing care in nephrology wards and dialysis stations is very important. It is estimated that up to 62% of chronically dialyzed patients suffer from RLS. In comparison, in the general population, the incidence of this disease does not exceed 15% [30].

Nephrology Wards

In the care of patients at nephrological wards, it is particularly important to care for their sleep hygiene, as dialysis patients very often suffer from insomnia which results in apathy and excessive daytime sleepiness. It is extremely important to treat each patient individually, so that for everyone there could be prepared environment for sleep according to their needs. Before falling asleep, it is worth ventilating the room and placing the patient in the right position. Sleep clothes should be made of natural materials such as cotton, which will prevent excessive sweating. As previously mentioned, the use of stimulants is not recommended, of which every patient must be informed. Thanks to the appropriate sleep hygiene, patients can be active during the day, their social contacts do not get worse, patients can focus on work and performing everyday activities [30].

Neurological Wards

Restless legs syndrome may occur in patients with Parkinson's disease, and therefore appropriate nursing care is also required in neurological wards. Both in the treatment of RLS and Parkinson's disease, levodopa preparations are applied. Research has shown that patients suffering from restless legs syndrome have Parkinson's disease at an earlier age, as opposed to patients in whom clinical signs of RLS are not observed and who have Parkinson's disease symptoms [41].

Both in the case of the former as well as the latter there occur disorders in the distribution of dopamine in the body. It is worth indicating that the nursing staff should know the role of dopamine in the body. That can help patients understand the nature of the disease. As in the afore-described cases, it is extremely important to maintain sleep hygiene, non-use of stimulants, which may exacerbate the trembling characteristic of Parkinson's disease. An extremely important element of patient's education is also to inform them about regular medicines and not giving up doses. Every patient who suffers from restless legs syndrome and the Parkinson's disease must be able to recognize symptoms so as not to confuse these diseases units [41].

Psychiatric Wards

The wards where one can meet patients suffering from restless legs syndrome include psychiatric wards. This is due to the RLS induced by antipsychotic and peridative drugs. RLS adversely affects the mental state of people suffering from this disease unit. This can lead to the development of depression and depressive-anxiety disorders. Numerous factors affect the development of this type of disorders, including ignorance of the disease, sleep disturbances, fear of disease symptoms, inability to make long trips, the necessity to resign from family meetings, lack of rest possibilities, and even fear of death when patients do not know that restless legs syndrome is not a disease which threatens their lives. These patients need first of all a conversation that will help them understand what RLS is and what treatment methods are. Patients often need mental support, which can greatly alleviate the severity of symptoms of depressive disorders caused by fear of illness and fear regarding their future. Patients need to know that an untreated restless leg syndrome can gradually reduce their quality of life and, consequently, aggravate depression and anxiety disorders. It is very important to stabilize patient's mental state, thanks to which the implemented restless legs therapy is more likely to be successful [35].

Cardiological Wards

Cardiological wards are also a place where patients with restless legs syndrome may appear. It is very important for nursing staff working in such a ward to be aware of the relationship of cardiovascular diseases with RLS in order to be able to educate patients properly. Studies have shown that restless legs syndrome may be a factor which generates elevated values of blood pressure, particularly when making involuntary movements of the lower limbs during sleep. In addition, hypertension, is related to sleep disorders caused by restless legs syndrome which include insomnia, sleep apnea and too short sleep duration. Hypertension generated by RLS is a risk factor for stroke and heart attack. It is important for patients to be aware of the consequences of untreated restless legs syndrome. Education carried out by nurses in the cardiology ward should be aimed at modifying the lifestyle. It is essential for patients to find the motivation to eliminate cardiotoxic factors such as cigarettes, alcohol and other drugs. Equally important is also the BMI index, which should be sustained within the correct range between 18.5 and 24.99. Patients should be encouraged to undertake physical activity as well as to modify eating habits [37,38,42].

Conclusions

Nursing care is extremely important in the diagnostic and therapeutic process of restless legs syndrome. Well-conducted education can accelerate the recovery of many patients who do not know the essence of the disease that they suffer from, are afraid of, and often ignore, not realizing how it can affect the quality of their lives [40].

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