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Effects of autoimmune disorders on daily lifestyle

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Summary

Systemic diseases of connective tissue are a group of diseases of unspecified aetiology and pathogenesis. They are based on the autoimmune process. It can involve single organs as well as whole systems. Neuropsychiatric complications in systemic connective tissue diseases are of interest to both neurologists and rheumatologists and specialists in other fields. These complications may occur with different frequency – from 30-80% and result from the involvement of individual structures of the central and peripheral nervous system. They can be divided into primary, i.e. resulting from the underlying disease, and secondary, which are most often the result of the applied treatment.

The most common psychopathological symptoms include: progressive cognitive disorders, emotional lability, mood and sleep disorders, as well as memory disorders,

psychosensory disorders, depersonalisation, derealisation, depressed mood, anxiety states, hallucinations, persecutory delusions. Diagnosing the cause of psychiatric disorders is the basis for introducing appropriate causal treatment, which should be supplemented by symptomatic psychiatric therapy.

Keywords: neuropsychiatric symptoms, autoimmune disease, connective tissue diseases, systemic lupus erythematosus

Introduction and purpose

Systemic connective tissue diseases are a group of diseases at the root of which is an autoimmune process consisting in the increased production of antibodies against particular antigens of tissues and organs. A common feature of these diseases is a chronic inflammatory process that can lead to symptoms such as fatigue, weakness, muscle and joint pain or lack of appetite. There is a correlation between chronic inflammatory diseases and chronic fatigue, depression and personality disorders.[1] Neuropsychiatric complications may occur with different frequency, it is estimated that it is within 30-80% and results from the involvement of the structures of both the central and peripheral nervous system. They may be caused by inflammatory and thrombotic changes in the vessels or due to pressure on peripheral nerves or nerve roots. The involvement of the structures of the central nervous system can be due to several reasons. It may be an element of the underlying disease related to the autoimmune process, it may result from the treatment used, e.g. with glucocorticosteroids, immunosuppression or biological drugs. They are also often the result of existential problems resulting from a chronic illness. In some diseases, such as SLE, they have been included in the diagnostic criteria and often come to the fore in the clinical picture.

Mental disorders may occur in the following systemic connective tissue diseases:

- Systemic lupus erythematosus (SLE)
- Systemic scleroderma
- Antiphospholipid syndrome
- Sjogren's syndrome
- Rheumatoid arthritis
- Systemic vasculitis

State of knowledge

Systemic lupus erythematosus (SLE) is a systemic disease of connective tissue which is based on the autoimmune process involving the production of antibodies, increased reactivity of lymphocytes and the deposition of immune complexes in organs. SLE symptoms include skin lesions, haematological disorders, internal organ complaints and neuropsychiatric complaints. The symptoms of lupus can be divided into "general" symptoms and those resulting from the involvement of individual organs. It should be noted that the disease is very different, depending on which organs are affected and to what extent. The most characteristic symptoms of this disease are: facial erythema, Raynaud's symptoms, arthritis without deformation, hypersensitivity to sunlight, alopecia, ulceration of both the mouth and nasopharynx, pleurisy or pericarditis. [2] Most often, the periods of exacerbation of the

disease alternate with the withdrawal of symptoms. The incidence of SLE is 30-50 / 100,000 people in the population. [3] The majority of patients are women of childbearing age. [4]

The most common psychopathological symptoms include progressive cognitive impairment, emotional lability, mood and sleep disorders, as well as memory disorders, psychosensory disorders, depersonalisation, derealisation, depressed mood, anxiety states, hallucinations and persecutory delusions. [5] Cognitive dysfunction is found in as many as 80% of patients and depression in about 40% of patients. [6] Neuropsychiatric symptoms in the course of SLE are a significant clinical problem because they significantly deteriorate the patient's quality of life and are an unfavourable prognostic factor for the disease.

Antiphospholipid syndrome (APS) is a systemic autoimmune disease in which the coexistence of: recurrent venous or arterial thrombosis in various organs, obstetric complications and antiphospholipid antibodies. Marker antiphospholipid antibodies (APL) include: anti-cardiolipin (ACL) antibodies in the IgG and IgM class, antibodies against β 2-glycoprotein I in the IgM and IgG class (anti- β 2 GPI IgM and anti- β 2 GPI IgG) and lupus anticoagulant. [7] It may occur spontaneously as the primary antiphospholipid syndrome and may accompany other diseases most often in systemic diseases of connective tissue (mainly systemic lupus erythematosus, neoplasms, and infections). [8] Mental disorders in the antiphospholipid syndrome may result either from circulatory disorders and blood clots, which worsen the blood supply to the brain tissue, or be a consequence of antiphospholipid antibodies circulating in the body. The CNS symptoms include, apart from strokes, chorea, transverse myelitis and progressive dementia. [9,10] The most common psychopathological symptoms in APS are cognitive disorders, characterised by disturbances in attention, concentration and the speed of information analysis. [11]

In other systemic connective tissue diseases, neuropsychiatric symptoms are much less common than in SLE and APS.

Rheumatoid arthritis is the most common autoimmune inflammatory disease of the joints. It affects 0.5% -1% of the general population in the world. Women are ill 2-3 times more often, and the highest incidence occurs in the 4th and 5th decade of life. [12] The disease is characterised by symmetrical arthritis of the hands and feet accompanied by a feeling of morning stiffness. The disease process can also involve large joints and other systems. The progressive inflammatory process damages the synovium of the joints, leads to the destruction of joint tissues, deformation, impaired joint function and disability. Patients also have many different extra-articular manifestations and systemic complications. [13] The frequency of mental disorders in RA is significantly higher than in the general population. [14] Macham F et al. analysed 72 studies in 13,189 RA patients in terms of depression. [15] On the basis of the conducted analysis, the authors concluded that depression in RA patients occurs significantly more often than in the general population. Its incidence is estimated at 9.5-41.5%.

Sjögren's syndrome is a chronic, inflammatory disease of the connective tissue with an autoimmune background. According to the traditional division, primary and secondary Sjögren's syndrome are distinguished. [16] The presence of SS-A (anti-Ro) antibodies is the most common in this disease. Its characteristic image is the so-called The dryness syndrome (sicca), which includes: dry eyes and oral mucosa, and lymphocytic infiltrates of the salivary glands. The feeling of dryness may also concern: the mucosa of the nasal cavity, vagina and skin. [17] Involvement of the nervous system may manifest itself as changes in the peripheral and central nervous systems. The most common disorders of the mental state include migraine headaches, cognitive disorders, anxiety syndromes, found in up to 48% of patients, and depression – diagnosed in approximately 32% of patients [18].

Systemic scleroderma belongs to the group of systemic connective tissue diseases of unknown aetiology. It mainly affects the skin and internal organs such as the heart, lungs, digestive tract and kidneys. [19] It is characterised by damage to blood vessels, the presence of autoantibodies, and progressive fibrosis of the skin and internal organs. Microcirculation abnormalities characteristic of systemic scleroderma contribute to the occurrence of behavioural, anxiety and cognitive disorders. However, neuropsychiatric symptoms are quite rare and most often concern the peripheral nervous system. The most common psychiatric complication is depression associated with a chronic disease. [18] Patients with systemic sclerosis are under strong psychological pressure, which favours its occurrence symptoms of anxiety and depression, moreover, patients show high interpersonal sensitivity and guilt. [20]

Systemic vasculitis is a broad group of autoimmune diseases of unknown aetiology, the essence of which is the infiltration of leukocytes onto the walls of blood vessels. The symptomatology of systemic vasculitis is very diverse and depends on the size of the inflamed vessels. The nervous system symptoms are caused by disturbed blood supply to the nervous tissue. Behçet's disease is a disease characterised by inflammation of the arteries and veins. Often, the first symptom of systemic vasculitis is persistent headache and cognitive impairment. Psychiatric symptoms in vasculitis include sleep disturbance, chronic fatigue, depression, cognitive impairment, and in the most severe forms, acute psychosis. [21,22]

It should be remembered that psychiatric complications may also be the result of the treatment used. Currently, glucocorticosteroids are the most common group of drugs used in the treatment of autoimmune diseases. Their chronic use, especially in high doses, may cause side effects, including those from the CNS. Most of the psychopathological symptoms are mild and resolve after discontinuation or reduction of the dose of steroids. The most common disorders of the mental state include emotional lability, hypomania, mania, depression, psychosis, delirium, confusion or orientation disorders (more often in the elderly) and cognitive disorders, including memory disorders. [23] Sleep disturbances have also been observed. Older patients are more prone to depression, mania, delirium, confusion and disorientation [8]. Other immunosuppressive drugs used in the treatment of autoimmune diseases very rarely cause psychopathological symptoms. It is difficult to establish a relationship between the occurrence of symptoms and a given drug, as a significant proportion of patients are additionally taking steroids. Therefore, it is difficult to state unequivocally whether the psychological symptoms belong to the side effects of the drug or have been aggravated by glucocorticosteroids.

Conclusion

Systemic connective tissue diseases with the underlying chronic inflammatory process resulting from autoimmune disorders quite often proceed with neuropsychiatric disorders. Neuropsychiatric complications occur with a variable frequency depending on the autoimmune disease. They can be a reaction to a severe chronic disease or be diagnostic criteria for this disease and have a rich symptomatology, like in SLE. They are always a big diagnostic problem and can occur in systemic lupus erythematosus, systemic sclerosis, antiphospholipid syndrome, rheumatoid arthritis, Sjogren's syndrome and systemic vasculitis. Depending on what causes mental disorders in connective tissue diseases, the treatment method is different. It should also be remembered that the medications used, especially glucocorticosteroids, may have an influence on the occurrence of psychiatric symptoms. It is important to recognise disorders, diagnose them and initiate appropriate causal treatment.

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