

The case of myelodysplastic syndrome after 65 years old

Przypadek zespołu mielodysplastycznego po 65 roku życia

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Abstract

Background. The etiology of MDS syndromes (myelodysplastic syndromes) is unknown. MDS is a disease of the elderly, mostly affects people over 50 years of age. Elderly patients with MDS are diagnosed at an earlier stage of the disease compared to younger people. Therapeutic options in MDS include treatment with high-dose chemotherapy with / without hematopoietic stem cell transplantation, treatment with low-dose chemotherapy, supportive care and symptomatic treatment. Transfusion of RBC (Red Blood Cells) concentrate and platelet concentrate is used in the majority of patients with MDS and it is the only form of therapy recommended for both patients with good and bad prognosis.

Case report. A 77-year-old patient repeatedly hospitalized in the Clinic of Geriatrics for symptomatic anemia in myelodysplastic syndrome. Independent patient in the field of self-care, living alone. Patient take many medicines from different groups. Patient with multidisease. Symptoms of the patient: weakness, depressed mood, reduced tolerance of physical exercise, dizziness, palpitations associated with slight physical effort, symptoms of

gastrointestinal bleeding, stenocardial complaints in 2017. A bone marrow biopsy was performed - in the myelogram MDS was diagnosed with features of low-grade triplicate dysplasia. Patient repeatedly hospitalized for transfusion of Irradiated Leukocyte-Depleted RBC Concentrate (since the beginning of 2018 11 times - average 1 x / month). From October 2012 to November 2018, a total of 49 Irradiated Leukocyte-Depleted RBC Concentrates units were transfused, reducing only the symptoms of the disease.

Results. A careful assessment of the functional status, ability to tolerate treatment, disease progression and overall health can be helpful in determining treatment. To improve access to treatment, emphasis should be placed on oral drug therapies that can be easily administered on an outpatient basis to minimize transfusion. Palliative care and environmental care are important aspects of improving the health and quality of life of MDS patients.

Background.

The etiology of MDS syndromes (myelodysplastic syndromes) is unknown. Risk factors for development may include: cytostatic drugs, radiation irradiation, contact with benzene and many others that damage deoxyribonucleic acid (DNA) [6,7].

Myelodysplastic syndromes (MDS) arise as a result of mutation and clonal myeloid cell proliferation. They are characterized by increased bone marrow proliferation, suppression of maturation, secondary cytopenia in peripheral blood [2,15].

MDS is a disease of the elderly, mostly affects people over 50 years of age. The average age of patients at diagnosis is 69 years. Among people aged 50-70, the prevalence is 4.9 per 100,000 inhabitants, among people over 70, it increases to 22.8 per 100,000 [2]. The average survival of patients is 2-3 years. Most die due to complications caused by bone marrow failure or AML transformation [2,16].

About 50% of MDS are recognized by accident. The existence of MDS may lead to the assessment of blood counts with smears in which single or multi-line cytopenia is found [8]. In order to diagnose MDS, morphological evaluation of the bone marrow and histopathological bone slice are necessary [5].

The most frequently observed clinical consequences of cytopenias: increased symptoms of anemia, haemorrhagic diathesis, recurrent infections, acute myelogenous leukemia [5,14].

Elderly patients with MDS are diagnosed at an earlier stage of the disease than younger people. Elderly patients may show signs of disease due to a slight decrease in hemoglobin. Elderly patients are examined as soon as they experience moderate anemia, which may explain the early diagnosis of MDS [11].

Therapeutic options in MDS include treatment with high-dose chemotherapy with / without hematopoietic stem cell transplantation, treatment with low-dose chemotherapy, supportive care, and symptomatic treatment [2,17]. Treatment with high-dose chemotherapy is recommended for patients at high risk, in good general condition, under 60 years of age. Treatment with low-dose chemotherapy and adjuvant therapy is indicated in patients with intermediate and low-risk groups. Symptomatic treatment as the sole form of therapy should be used in patients who are not eligible for other treatments [2,3].

Transfusion of RBC concentrate and platelet concentrate is used in the majority of patients with MDS as the only form of therapy is recommended in patients with good prognosis and in patients with bad prognosis, disqualified for other forms of therapy [10]. Its aim is to improve the quality of life of patients. The decisive indication are clinical symptoms, most commonly occurring at hemoglobin concentrations below 8 g%. Transfusion of platelet concentrates should only be used in patients with thromboembolic lesions. Prophylactic administration of platelet counts is not recommended due to the possibility of alloimmunization in the HLA and platelet antigens [2,4].

The results of scientific research have proved that adjuvant therapy is very important in the treatment of chronic anemia in MDS [17]. According to the researchers, administering patients with erythropoietin (EPO) results in increased hemoglobin concentration, thus reducing the need for substitution of red blood cell concentrates. This contributes significantly to improving the patient's clinical condition and quality of life [8]. According to scientists, there is an improvement in approximately 20 to 30% of patients treated with Erythropoietin. In the absence of response to therapy, the researchers recommend increasing the EPO dose or adding a granulocytic growth factor (G-CSF). Due to the synergism of the stimulating effect of EPO and G-CSF, there is an increase in erythropoiesis in patients with myelodysplastic syndrome [1].

Case report.

A 77-year-old patient repeatedly hospitalized in the Department of Geriatrics for symptomatic anemia in myelodysplastic syndrome. Independent patient in the field of self-care, living alone.

Main symptoms: weakness, depressed mood, reduced tolerance of physical exercise, dizziness, palpitations with little effort, symptoms of gastrointestinal bleeding, stenocardial ailments.

Coexisting diseases: type II diabetes treated with oral medications, hypertension, generalized atherosclerosis, NYHA chronic heart failure type II, after the implantation of a mechanical mitral valve prosthesis due to a complex defect with the predominance of stenosis (2005). Suspicion of peri-valvular leak, moderate aortic stenosis, pulmonary hypertension, tricuspid regurgitation, persistent atrial fibrillation, (electric cardioversion without permanent sinus rhythm return in 2005) liver cirrhosis, chronic gastritis, condition after coagulation with argon beam 5-millimeter Baysin valve angiodysplasia (2016), state after laparoscopic cholecystectomy due to cholelithiasis cholecystectomy (2011), condition after ERCP (Endoscopic retrograde cholangiopancreatography) due to cholelithiasis of the common bile duct (2011), status after cholecystitis biliary peptic ulcer disease (2011), condition after appendectomy, state after hysterectomy with adnexectomy due to uterine fibroids. The patient diagnosed with anemia from 2012.

The patient was hospitalized in the Department of Hematology in 2017. A bone marrow biopsy was performed - in the myelogram MDS was diagnosed with features of low-grade triplicate dysplasia. From December 2018, the patient took 40 mg encortone, no improvement, and the decrease in hemoglobin was observed, and the prednisone was given a slow stop. During the hospitalization (January 2018), 2 units of Irradiated Leukocyte-Depleted RBC Concentrate and 1000 mg of Manover were transfused. Patient repeatedly hospitalized to transfuse Irradiated Leukocyte-Depleted RBC Concentrate (since the beginning of 2018 11 times - average 1 x / month). From October 2012 to November 2018, a total of 49 Irradiated Leukocyte-Depleted RBC Concentrate units were transfused, reducing only the symptoms of the disease. During hospitalization in December 2018 performed gastroscopy and colonoscopy. In the diagnostic examination of the colonoscopy, a vascular change was performed with APC electrocoagulation and a clip was attached - bleeding was stopped. Gastroscopy did not cause pathological changes.

In laboratory tests, the patient had: significantly elevated glucose, RDW-CV, RDW-SD, creatinine, APTT, INR, prothrombin time. A significant decrease was observed in the following indicators: RBC, HGB, HCT, MCHC, LYMPH, glomerular filtration, prothrombin index.

Drugs used: acenocumarol 4 mg, bisocard 2.5 mg, bisocard 5 mg, clexane 60 mg/0.6 ml, clexane 80 mg/0.8 ml, diaprel Mr 60 mg, digoxin 0.1 mg, digoxin 0.25 mg, fentanyl 0.1 mg/2 ml, fortrans, furosemidum 40 mg, ipp 20 mg, ipp 40 mg, natrium chloratum 0.9% 9

mg/ml, prestarium 5 mg, siofor 500 mg, siofor 850 mg, spironol 100 mg, spironol 25 mg, tulip 20 mg

Discussion.

Case report of a 91-year-old woman with trilobium pancytopenia peripheral blood. The patient underwent routine tests that excluded infectious diseases, macroelement deficiencies, tumors, and bleeding. Bone marrow examination was not initially performed due to the patient's advanced age and lack of readiness to undergo the diagnostic procedure [10]. Morphological analysis of bone marrow smear showed anisopoikilocytosis of erythrocytes and platelets, along with hypogranularity and granulocytes nuclear hyposegmentation; no circulating immature cells were found. The patient was treated with 5-azacitidine. It has been reported that treatment with 5-azacitidine provides much better therapeutic results than other traditional methods of treatment [12].

Researchers were asking whether to treat elderly patients with MDS? The financial costs of hypomethylating agents are high. According to reports, the therapeutic effect of hypomethylating agents is not related to the patient's age; in fact, beneficial reactions have been obtained in patients over 75 years of age. The patient's medical history should be taken into account [9,12].

Where should older patients with MDS be treated? This case illustrates the important role that specialized home care can play in the treatment of patients with MDS [14]. Access to the hospital may be difficult due to many factors: heavy burden of disease symptoms, impairment of daily life activities, social isolation, financial problems and psychological limitations. To improve access to treatment, emphasis should be placed on oral drug therapies that can be easily administered on an outpatient basis to minimize transfusion [18]. The best way to deal with older MDS patients is home care; however, for the appropriate treatment of these complex patients in the home a specialized home care team is needed, connecting to the hospital and other local services [12,13].

Conclusions.

A careful assessment of the functional status, ability to tolerate treatment, disease progression, and overall health can be helpful in determining treatment. To improve access to treatment, emphasis should be placed on oral drug therapies that can be easily administered on an outpatient basis to minimize transfusion. Palliative care and environmental care are important aspects of improving the health and quality of life of MDS patients.

Bibliography.

1. Sawczuk-Chabin J, Seferyńska I. Leczenie zespołów mielodysplastycznych. [Treatment of myelodysplastic syndromes]. Postępy Nauk Medycznych. (2003); 3-4: 93-98 (in Polish).
2. Kata D, Kyrz-Krzemień S. Zespoły mielodysplastyczne – współczesna diagnostyka, klasyfikacja i leczenie. Część II: Opcje terapeutyczne w zespołach mielodysplastycznych. [Myelodysplastic syndromes - contemporary diagnostics, classification and treatment. Part II: Therapeutic options in myelodysplastic syndromes]. Postępy Nauk Medycznych. 2011; 24(6): 504-511 (in Polish).
3. Cioch M. Zespoły mielodysplastyczne. [Myelodysplastic syndromes]. Zamojskie Studia i Materiały. (2011); 13(4): 65-68 (in Polish).
4. Komarnicki M, Szymala K. Zespoły mielodysplastyczne. [Myelodysplastic syndromes]. Współczesna Onkologia. (2003); 7(9): 692-70 (in Polish).
5. Kata D, Kyrz-Krzemień S. Zespoły mielodysplastyczne – współczesna diagnostyka, klasyfikacja i leczenie Część I: Diagnostyka, klasyfikacja i stratyfikacja prognostyczna zespołów mielodysplastycznych. [Myelodysplastic syndromes - contemporary diagnostics,

- classification and treatment Part I: Diagnosis, classification and prognostic stratification of myelodysplastic syndromes]. *Postępy Nauk Medycznych*. (2011); 6: 499-503 (in Polish).
6. Dmoszyńska A, Giannopoulos K. Nowotwory hematologiczne wieku starszego. [Hematologic neoplasms of the elderly]. *Postępy Biologii Komórki*. (2005); 32(1): 115-124.
 7. Argento V, Roylance J, Skudlarska B, Dainiak N, Amoateng-Adjepong Y. Anemia Prevalence in a Home Visit Geriatric Population. *Journal of the American Medical Directors Association*. (2008); 9(6): 422-426.
 8. Jansen A, Essink-Bot M, Beckers E, Hop W, Schipperus M, Van Rhenen D. Quality of life measurement in patients with transfusion-dependent myelodysplastic syndromes. *British Journal of Haematology*. (2003); 121(2): 270-274.
 9. Stauder R. The challenge of individualized risk assessment and therapy planning in elderly high-risk myelodysplastic syndromes (MDS) patients. *Annals of Hematology*. (2012); 91(9): 1333-1343.
 10. Ma X, Does M, Raza A, Mayne S. Myelodysplastic syndromes. *Cancer*. (2007); 109(8): 1536-1542.
 11. Dewulf G, Gouin I, Pautas E, Gaussem P, Chaïbi P, Andreux J, Siguret V. Myelodysplastic syndromes diagnosed in a geriatric hospital: morphological profile in 100 patients. *Annales de Biologie Clinique*. (2004); 62(2): 197-202.
 12. Niscola P, Palombi M, Trawinska M, Tendas A, Giovannini M, Scaramucci L, Perrotti A, Fabritiis P. Managing myelodysplastic syndromes in very old patients: a teaching case report. *Clinical Interventions in Aging*. (2013); 8: 391-394.
 13. Kurtin S. Myelodysplastic syndromes: diagnosis, treatment, planning, and clinical management. *Oncology Journal*. (2007); 21(11): 1-3.
 14. Bammera Ch, Sperr W, Kemmler G, Wimazal F, Nösslinger T, Schönmetzler A, Krieger O, Pfeilstöcker M, Valent P, Stauder R. Clustering of comorbidities is related to age and sex and impacts clinical outcome in myelodysplastic syndromes. *Journal of Geriatrics Oncology*. (2014); 5(3): 299-306.
 15. Deschler B, Ihorst G, Platzbecker U, Germing U, März E, Figuerido M, Fritzsche K, Haas P, Salih H, Giagounidis A, Selleslag D, Labar Witte T, Wijermans P, Lübbert M. Parameters detected by geriatric and quality of life assessment in 195 older patients with myelodysplastic syndromes and acute myeloid leukemia are highly predictive for outcome. *Haematologica*. (2013); 98(2): 208-216.
 16. Buckstein R, Wells R, Zhu N, Leitch H, Nevill T, Yee K, Leber B, Sabloff M, Hilaire E, Kumar R, Geddes M, etc. Patient-related factors independently impact overall survival in patients with myelodysplastic syndromes: an MDS-CAN prospective study. *British Journal of Haematology*. (2016); 174(1): 88-101.
 17. Ria R, Moschetta M, Reale A, Mangialardi G, Castrovilli A, Vacca A, Dammacco F. Managing myelodysplastic symptoms in elderly patients. *Clinical Interventions in Aging*. (2009); 4: 413-423.