Myelodysplastic Syndrome – Case Report

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We present the case of a 52-year-old male, electrician and driver, with a history of smoking and chronic alcohol consumption, without a remarkable family history but with a particular personal history (bone marrow hypoplasia, transhiatal gastric hernia, Barett Syndrome, nutritional toxic hepatopathy, chronic otitis, transmission hypoacusis), who was admitted to Fundeni Center of Bone Marrow Transplantation (FCBMT) in April 2003.

We find out from the personal history that the patient suffered from idiopathic bone marrow hypoplasia between 1973 and 1975, the patient being on CFR Hospital records. The blood counts at that time showed pancytopenia and the bone marrow biopsy revealed hypoplasia. He was treated with supportive therapy, corticotherapy, Leucotrofin, Decanofort and achieved remission in 1975. In June 2002 the patient presented with diffuse abdominal pain, anemic syndrome at Gastroenterology and Hepatology Center, Fundeni Clinical Institute. Investigations revealed Hgb 8.8 g/dL, Hct 24.4%, WBC 7.3 x 109/L, Segmented neutrophils 50%, Lymphocytes 39.5%, Monocytes 10.7%, Platelets 40.7 x 109/L, macro-megalocytes, hyperlobulated granulocytes, sideremy 109 g/dl. The bone marrow aspirate showed normoplasia, normoblastic erythropoiesis, macro-megaloblastic changes, normal granulopoesis, eosinophilia, slight basophilia, normal megakaryocytes. The folate level was 12.7 ng/mL (normal range: 13.2-15ng/ml) and vitamin B12 level was within normal limits. Superior gastrointestinal endoscopy revealed transhiatal gastric hernia, Barett Syndrome and chronic gastritis. Ecography and irrigography were normal. Based on the findings, the patient was diagnosed with folate-deficiency anemia and received treatment with folic acid and vitamin B6, which led to the correction of anemia (Hgb 12.6g/dL) but macrocitosis and hyperlobulated granulocytes persisted. In March 2003 the patient experienced fatigue, dizziness, palpitations, progressive dyspnea. The blood counts in ambulatory care showed Hgb 5.3 g/dL, Hct 15.5%, WBC 8 x 109/L, PLT 55.5 x 109/L.

The patient presented to FCBMT in April 2003 with mediocre general condition, anemic syndrome, night sweats, BP=100/50 mmHG and a heart rate of 88 bpm. The blood count showed Hgb 4.6g/dL, Hct 13.3%, Ret 2.4 %, MCV 122 fL, WBC 5.9 x 109/L, PLT 43.2 x 109/L, Segmented neutrophils 55%, Eosinophils 4%, Basophils 2%, Lymphocytes 32%, Monocytes 7%. The peripheral smear revealed erythrocyte anisocytosis with macrocytes and rare microcytes, megalocytes , hyperlobulated granulocytes, rare ovalocytes, teardrop-shaped erythrocytes, platelet anisocytosis. The bone marrow aspirate showed hypocellular bone marrow, erythroblastopenia, megaloblastic erythroblasts with Jolly bodies and basophilic stippling, hypogranular and hyperlobulated granulocytes. The serum iron level was elevated (281 g/dl) and so was the erythropoietin level (300mUI/mL). Vitamin B12 and serum folate were found within normal limits. The serum ferritin level could not be tested at that time. Ecography did not reveal any particularities. The levels of urinary porphyrins and δ-Aminolevulinic acid were also measured and they were found within normal limits.

The patient was diagnosed with Myelodysplastic Syndrome- Hypersideremic refractory anemia with bilineal dysmyelopoiesis. The differential diagnosis excluded folic acid deficiency anemia and also porphyria. Since the patient had a high platelet count, 5q- syndrome and Refractory anemia with ringed sideroblasts associated with marked thrombocytosis (RARS-T) were also taken into account, but the Perls stain did not reveal ringed sideroblasts and the test for JAK 2 mutation was not possible at that time. This is why it was also not possible to calculate the IPSS score.

The treatment consisted in red blood cells transfusions, vitamin B6, folic acid, cyclosporine for erythroblastopenia and intermittent NeoRecormon.

The patient responded well to the treatment and rare episodes of severe anemia without hemorrhagic syndrome (which were treated with supportive care) were recorded. The patient also developed progressive hepatomegaly, sideremy increased to 382 g/dl, ferritin level was 8 times higher than normal (2000 ng/L), GGT (120 U/L) and ALT (101U/L) also increased, which led to the suspicion of hemochromatosis caused by repeated blood transfusions and erythroblastopenia. The abdominal RMI was suggestive for liver hemochromatosis. Based on these findings, treatment with Exjade 1250mg/day was initiated, but only after ENT (preexisting transmission hypoacusis), ophthalmologic, cardiac (including an echocardiography) and nephrology (proteinuria and creatinine clearance) examinations with results situated in the normal limits. The therapeutic response was favorable, ferritin levels decreasing to values

< 1000g ng/mL. Episodes of elevated transaminases and GGT levels were recorded but they were considered to be indicators of nutritional toxic hepatopathy and hemochromatosis. Concerning the renal function, serum creatinine level reached 2.6 mg/dL at one point, forcing the interruption of Exjade administration for 10 days. The creatinine levels reverted to normal and therapy with Exjade was resumed in a lower dose (500 mg/day). After a while, the ferritin levels decreased to normal levels therefore the iron chelation therapy was interrupted. However, the ferritin levels increased again to values > 1000 ng/mL, requiring therapy reinitiation, the current dose being 250 mg/day.

The particularity of the case consists in the association of multiple hematological disorders with a longer than 30 years course: bone marrow hypoplasia (remitted on white cell and megakaryocytic lines), myelodysplastic syndrome, erythroblastopenia, secondary hemochromatosis and thrombocytosis. It is an intricate case which associates multiple gastrointestinal disorders, requiring interdisciplinary communication. Concerning hemochromatosis, Exjade therapy in a progressive lowering dose led to a favorable response, ferritin level and liver enzymes reverting to normal. The next step consists of liver hemochromatosis imagistic re-examination and also of cytogenetic examination in order to improve the accuracy of the diagnosis and evaluate the patient's prognosis.