SYSTEMIC LIGHT CHAIN AMYLOIDOSIS: MANAGEMENT.

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Systemic light chain amyloidosis (AL amyloidosis or primary amyloidosis) is a very severe disease caused by tissue deposition of immunoglobulin light chain produced by a small population of monoclonal plasma cells. This deposits of amyloid is done perivascular / intercellular in all body tissues, notable exception the brain, in a very uneven manner and will cause suffering of predominantly affected organs (heart, kidneys, gastrointestinal tract, liver, spleen, nerves ...)

The estimated incidence of the disease is around 10 patients / million inhabitants / year. This means in Romania about 200 new cases of AL amyloidosis / year. Unfortunately, the actual incidence and prevalence of the disease is much, much smaller than expected. The cause is lack of proper diagnosis of the disease, non-recognition of specific symptoms. There are several reasons for this:

- very heterogeneous pattern of clinical presentation, the patient shows symptoms related to predominant involvement of disease (neuropathy, restrictive cardiomyopathy, kidney disease, digestive disorders transit ...) and rarely the specialist (neurologist, cardiologist, nephrologist, gastroenterologist ..) thinks of this disease.

- lack of clear changes in laboratory tests: bone marrow usually indicates a slight plasma cells (60% of patients have bone marrow plasma cells less than 10%), serum protein electrophoresis is normal in 40 to 50% of cases, and serum protein immunofixation is normal 20 to 30% of the cases.

- difficulties in the histological diagnosis - only few pathologists have experience in Congo red staining and examination in polarized light. We encounter frequently false negative, and false positive results.

In addition, even if the diagnosis of amyloidosis was achieved, sometimes we have problems in differential diagnosis of light chain amyloidosis with hereditary amyloidosis - eg type transthyretin amyloidosis Gln 54 Glu specific population of Romania, the age of onset and clinical presentation (restrictive cardiomyopathy, neuropathy) are similar with AL amyloidosis, but completely different treatment and prognosis. Hereditary amyloidosis is suspected on family history and the absence of signs of monoclonal gammopathy - need to do immunohistochemistry, sequencing amyloid fibril and molecular testing.

Correct diagnosis, determining prognosis and careful monitoring of AL amyloidosis require using some of new tools: serum free light chain assay (FLC) and NT-proBNP.

The prognosis of these patients depends on: the time of diagnosis - an early intervention gives excellent results; the number and type of affected organs predominantly - multiorgan involvement or severe cardiac disease (ventricular septum over 15 mm) indicates very severe prognosis.

Etiological therapy in light chain amyloidosis is aimed, similar to that of multiple myeloma, to destroy plasma cell clonal population producing amyloid precursor: bortezomib, melphalan, cyclophosphamide, dexamethasone, autologous bone marrow transplantation. Since the time of diagnosis we have to do risk stratification and therapy will be personalized according to risk group. An important role is supportive therapy that requires a multidisciplinary team trained in managing these patients.

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