The significance of 18FDG PET/CT in patients with newly diagnosed Waldenström macroglobulinemia

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Introduction: Waldenström’s macroglobulinemia (WM) is a rare malignant B-lymfnoproliferative disorder which is relatively indolent. It is characterized by bone marrow infiltration by tumor cells of lymphoplasmocytic lymphoma (LPL) with production of IgM monoclonal immunoglobulin. Advanced WM is accompanied with lymphadenomegaly, hepatosplenomegaly, anemia and thrombocytopenia due to neoplastic bone marrow involvement with depletion of normal hematopoiesis. B-symptoms are frequently present, and the patient may have symptoms of hyperviscosity syndrome because of high monoclonal IgM concentrations. Some other symptoms associated with IgM paraproteinemia might be present, too, such as nephropathy, neuropathy, amyloidosis, cryoglobulinemia or autoimmune hemolytic anemia. Aims: The aim of our paper was the assessment of 18F-FDG positron emission tomography and computed tomography at the time of diagnosis with relation to the extent of the disease and to the presence of lymphadenopathy or splenomegaly. Patients and methods: Our cohort consisted of 21 patients with newly diagnosed WM fulfilling histopathology criteria of LPL with the presence of IgM paraprotein. In 7 patients the disease was asymptomatic and we chose the “watch and wait” strategy. In 14 patients the disease was symptomatic requiring therapy (14 times anemia/thrombocytopenia, 3 times hyperviscosity syndrome, once palpable lymphadenomegaly, once hemolytic anemia). In symptomatic patients, PET/CT was assessed before treatment start in 11 cases, in 3 patients shortly after the treatment initiation. Results: In 7 patients with asymptomatic WM there was no FDG accumulation in the bone marrow with no signs of lymphadenomegaly, splenomegaly or any other extramedullary activity. In patients with symptomatic disease there was combined diffuse and focal activity in bone marrow in 11 patients (SUV max 4,0), in 2 patients we found splenomegaly without increased FDG uptake. Lymphadenomegaly was found in 8 patients, in 6 of them with increased FDG uptake (SUV max 2,2-19,5). In 3 patients the lymphadenopathy was solely visceral. Conclusions: 18F-FDG PET/CT is a useful tool in diagnostics and assessment of WM advanced state. Because of biological characteristics of the disease, the dominant FDG uptake is in the bone marrow. Lymph node involvement is quite frequent, on the other hand splenomegaly was found only in rare cases.

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