Anaplastic Large Cell Lymphoma: Clinical and Histologic Features of 16 Patients

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Introduction. Anaplastic Large Cell Lymphoma (ALCL) is a rare type of aggressive T-cell lymphoma. Tumor cells are highly anaplastic, strongly positive for antigen CD30 and express reduced phenotype (usually CD3- and CD7-, often CD45-) that may considerably complicate diagnosis. 60–70% of the patients express Anaplastic Lymphoma Kinase (ALK1) that is associated with t(2;5)(p23;q35.1) and better prognosis. ALCL constitutes about 2% of all lymphomas and 12% of childhood lymphomas; primary cutaneous ALCL is diagnosed in 9% of cutaneous lymphomas. WHO classification discerns three types of ALCL: systemic ALK+, systemic ALK- and primary cutaneous ALCL. Systemic cases usually present as a widely disseminated disease with rapid progression. Systemic ALK1+ ALCL has predilection for extranodal infiltrates, ALK1- – to nodal involvement, while primary cutaneous ALCL is isolated to skin. Extranodal sites include bone marrow, bone, soft tissues, lungs, liver, skin and GI tract. Five morphologic patterns can be recognized: common, lymphohystiocytic, small cell, Hodgkin-like and composite.

Aims. The aim of the study was to retrospectively analyse clinical features at presentation and histology of ALCL cases diagnosed in the Institute of Pathology of Paul Stradins Clinical University Hospital, Pathology Center of Riga Eastern University Hospital and Pathology Bureau of Children's Clinical University Hospital.

Material and Methods. 16 documented cases were found for the time period of 2003–2014. Patients' files from the hospital archives were studied, histological and immunohistochemical slides were microscopically reevaluated.

Results. Patients' age varied between 11 and 80 years (mean – 33.5). 10 cases were male (M:F = 1.67:1). All cases were primary systemic and widely disseminated; 11 patients had extranodal infiltrates, including skin in 5 cases and bone marrow in 6, as well as bones, meninges, brain, adrenal gland, lungs, liver, spleen, gastric wall, orbit and muscles. 14 patients had systemic symptoms; blood counts were abnormal in 10 cases, inflammation markers increased in 11 patients. 3 patients were HIV+ with particularly fulminant clinical course.

Lymph node biopsy was diagnostic in 10 cases (7 peripheral nodes, 2 abdominal and 1 mediastinal), trephine biopsy in 3, skin biopsy in 2 and bone (vertebral) biopsy in 1. Morphologically, 10 cases showed common pattern, 4 lymphohistiocytic, 1 small cell and 1 Hodgkin-like. Diffuse infiltrate was observed in 9 cases, cell clusters in 4 and intrasinusoidal infiltration in 2. Prominent necrosis was found in 7 cases. All cases were strongly positive for CD30. 14 cases were stained for ALK1, 6 of them were positive and 8 negative, including all HIV+ cases. Median age of patients with ALK+ALCL was 25 years and M : F = 2 : 1; median age of ALK- patients was 56 years and M : F = 3 : 1. CD45 (LCA) was positive in 13 cases (very weak in 2), and negative in 3. The most specific T-cell antigen CD3 was positive in only 2 cases (2 of them weakly). No expression of B-lineage, epithelial and soft tissue antigens was found, except Vimentin was positive in all 6 tested cases and EMA in 12 out of 14 cases.

Conclusions. ALCL has been successfully diagnosed in Latvia over the last decade, in spite of considerable diagnostic difficulties. The study revealed an uncommonly high incidence of ALK- systemic ALCL in Latvian population. On the other hand, no primary skin cases have been documented, that could indicate hypodiagnostics. HIV+ ALCL is extremely rare worldwide, 3 cases in this small cohort are unusual. Otherwise, clinical, histologic and phenotypic features of the studied patients, though exotic, were well in accordance with the published data.