CHRONIC MYELOID LEUKEMIA – TREATMENT RESPONSE AND INVOLVED FACTORS.

Oana Patrinoiu
Colentina Clinical Hospital, Bucharest

Chronic myeloid leukemia (CML) is probably the most studied malignancy and served as a pacemaker in developing new concepts and strategies in Oncology. More than 90 % of patients with CML Philadelphia-chromosome (Ph +) have in translocation of the Abl gene from chromosome 9 on chromosome 22 , t [(9; 22) (q34 ; q11)] . At the molecular level this translates into the emergence of a new hybrid gene , fusion (BCR-ABL) that encodes for an oncoprotein (p210 , rarely p190 or P230) , with tyrosine kinase activity
According to the latest European LeukemiaNet guidelines (ELN) published in the journal Blood journal (August 2013), the response to treatment with tyrosine kinase inhibitors (TKI) is the most important prognostic factor in the disease.
Given the new recommendations we made a database with about 90 patients hospitalized in Hematology Clinical Hospital Colentina and CML- diagnosed with chronic, accelerated and blastic phase, in the last 5 years. Both retrospectively and prospectively, we have completed individual files in which we monitored several variables that may influence the response to treatment: clinical parameters and especially paraclinical (sex, age, comorbidities, splenomegaly, stage of disease onset, number of cells at the onset, prognostic scores (score EUTOS, Sokal), the initial dose of TKI, the cytogenetic and molecular exam every six months. Very important are the new elements emerged during TKI therapy (clonal cytogenetic abnormalities when changing therapy, mutations in the kinase domain of BCR -ABL1).
Depending on the results, newly diagnosed patients were included from the beginning in two groups: low risk and high risk of progression disease , aiming to correlate data with the literature .
Patients in the study group were hospitalized in Colentina and Coltea Clinical Hospitals, in the period 2009-2014 diagnosed with CML in all phases.So far I I have identified 88 patients from both hospitals
I have compiled a data sheet for every patient with the leading individual hematologic known prognostic factors in treatment response. I filled up 43 sheets with tracking parameters. Partial results have identified as favorable prognostic factors : female sex (61 % of those with CMR to 12 months), the early molecular response (64% of these patients had CMR to 2 years) , low risk-Sokal score: 86 % of these patients had CCR 6 months. The unfavorable factors: clonal cytogenetic abnormality- one case with trisomy 8 had lost RMM and one case of trisomy Ph that progressed to acute leukemia. The BCR-ABL domain mutations were important and significant: T315I -1 case- went to allotransplant early in the course of the disease, 1 case with V299L mutation - loss of MMR.
Regarding the response with second generation TKI administered after Imatinib: 2 of the 5 patients receiving Dasatinib achieved MMR or RMC , none of the 2 on Nilotinib.

ACKNOWLEDGEMENT: This paper is supported by the Sectoral Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romania Government under the contract number POSDRU/159/1.5/S/137390/".The present article has been elaborated and written by Oana Patrinoiu, MD and fourth year PhD student since 2011, at UMF Carol Davila Bucharest, under the coordination of Prof. Dr. Anca Lupu, MD PhD- Hematology Department