THE RESULT OF MOLECULAR ANALYSIS TO DETECT BCR-ABL HYBRID GENE IN LINGUAL EPITHELIUM CELLS IN SUBJECTS WITH PH CHROMOSOME POSITIVE / BCR-ABL POSITIVE CML.

Marius Balea*, Anca Ilea**, Oana Patrinoiu* and collaborators
*Hematology, Colentina Clinical Hospital, Bucharest,
**Ritus Biotec, Brasov, Romania

Background: The clinical and biological remarks on subjects with CML Ph + / BCR-ABL positive suggests that the intensity of hybrid bcr-abl gene expression in erythroblasts and megakarioblasts and its extension in other cells of hematopoietic and non hematopoietic systems like: lymphocytes, macrophage, fibroblasts, cells of vascular endothelium, epithelial cell have, on one hand, prognostic implications and on yhe other allow a deeper understanding of the disease
Aims: It is known even since 1961 the absence of Philadelphia chromosome in non hematopoietic cells like research cultured epidermal cells taken from subjects with Ph + CML (Tough IM , Court-Brown WM, et al - Lancet 1: 411, 1961),later Jacqueline Whang, Emil Frei et al (Blood, 1963,22,664), and the presence of Philadelphia chromosome in leukemia cells only, like myeloblasts , erythroblasts and megakariocites ; Researches are continued in the same direction by Martin PJ et al (Nature 287: 49.1980), HP Koeffler et al (Blood 55: 1063.1980), Segneurin D. et al (ExpHematol 15:822.1986) too. We consider it appropriate and useful to continue deepening in researching this theme so we tried to prove the presence/ absence of BCR-ABL hybrid gene in oral epithelial cells
Methods: In one male patient aged 31 years old, admitted in our Hematology Clinic on 11th of February 2015, with important splenomegaly (spleen diameters 32/16/14 cm) and a leukocyte number of 611000/mmc, peripheral blood samples were taken with explicit patient consent. In parallel, after prior mouth toilet with sterile saline water, epithelium cells from his mouth were taken with the help of the BRUSH CERVEX toothbrush. We have preserved this cells in saline sterile containers and containers SURE PATH (BD DIAGNOSTICS Tripathi); Samples were processed using equipment PCR- Real Time System, Applied Biosystems One-Step RNA isolation, reverse transcription stranded after clasic methods. DNA single-stranded was amplified by real-time PCR with specific primers of the p210 BCR-ABL p210 transcript and abl gene as control gene (after Gabert et al, Leukemia 2003);
Results: The analysis was performed in duplicate; In peripheral blood result was positive: Ratio major BCR-ABL / ABL: 100% IS; Due to the lack of genetic material extracted from oral epithelial cells (control abl gene was <10,000 copies) the BCRABL hybrid gene expression was negative in this cells
Summary/Conclusion: Due to the lack of genetic material extracted from oral epithelial cells (control abl gene was <10,000 copies) the BCR-ABL hybrid gene expression was negative in this cells. We will continue research on a larger number of cases with improved harvesting and extraction techniques and we will present the results to a later session. În parallel, we will extend this research, namely the magnitude of the BCR-ABL hybrid gene expression în individualized elements like erythroid, megakaryocytic and myeloid cells.
Keywords: BCR-ABL hybrid gene in nonhemato-poietics cells