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Study of gene expression of CD30 variant (CD30v) and CD30 ligand (CD30L) in acute leukemia

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Proliferation of malignant lymphohematopoietic cells is thought to be regulated by a number of surface molecules on tumour cells whose expression may contribute to neoplastic transformation. In this work, reverse transcriptase polymerase chain reaction (RT-PCR) was used to detect the gene expression (mRNA) of CD30 variant (CD30v) and CD30 Ligand (CD30L) on the peripheral blood mononuclear cells (PBMCs) of 15 healthy individuals as a control group, 15 patients with newly diagnosed acute myeloid leukemia (AML) and 15 patients with newly diagnosed acute lymphocytic leukemia (ALL). The results revealed that simultaneous positive expression of both CD30v and CD30L was found in 46.7%, 40% and 53.3% of whole leukemic patients and those with AML and ALL respectively, with significant difference from controls in whom no expression was found (P=0.007, 0.021 and 0.005, respectively). Patients with positive expression of CD30v and CD30L were found to have significantly increased blast cell % (p<0.001), increased total leucocytic count (P<0.001) and decreased platelets count (P<0.001) than those with negative expression. No significant difference in expression could be noticed in relation to age (p>0.05), sex (P=0.998.) or hemoglobin (Hb) level (P=0.20). As regard to immunophenotypes of ALL, positive expression was found to be significantly higher in B-cell than T-cell subtype (77.8% versus 16.7%, P=0.02). It could be concluded that frequent expression of CD30V and CD30L was detected only in newly diagnosed cases of AML and ALL, but not in healthy individuals. Positive expression was also significantly associated with more aggressive disease and with B-cell than T-cell subtypes. These results suggested a possible role of these molecules in pathogenesis of such hematopoietic malignancy. Further studies are needed for better understanding of the involved mechanisms.