 PURPOSE: To assess whether the poor prognosis of ZAP70-positive B-cell chronic lymphocytic leukemia (CLL) is associated with the overexpression of ABC transporter genes that are responsible for pleiotropic drug resistance.

MATERIALS AND METHODS: The transcript level of ten drug transporters was analyzed using semiquantitative and quantitative RT-PCR in control hematopoietic cells, in 41 CLL patient samples and in 5 lymphoma cell lines. ZAP70 status was determined by immunoblotting.

RESULTS: Of all analyzed transporters, MDR1, MDR2, MRP1, MRP4, MRP5, and MRP7 were expressed at a significantly higher level in B lymphocytes when compared with other hematopoietic cells in peripheral blood. A subgroup of 41 CLL patient samples showed similar or higher expression of these genes than control B cells, and CLL cells exhibited high expression when compared with multiple lymphoma cell lines. No significant correlation between ZAP70 expression and ABC transporter expression was observed.

CONCLUSION: The ZAP70 status is independent of the multidrug resistance phenotype in CLL.