



Expression differences in *TEL-AML1* fusion gene in leukemia glucocorticoid-sensitive and -resistant cell lines

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ABSTRACT. We investigated the expression differences of the *TEL-AML1* fusion gene in a leukemia glucocorticoid (GC)-sensitive cell line (CEM) and a GC-resistant cell line (Jurkat). Changes in *TEL-AML1* expression before and after GC exposure were analyzed. Expression of GC-sensitive and GC-resistant leukemia cells following initial diagnosis and during treatment was simulated. Leukemia cells were divided into a GC-unexposed or a GC-exposed group. A methyl thiazolyl tetrazolium assay was used to detect cell proliferation inhibition, flow cytometry was used to observe cell apoptosis, reverse transcription-polymerase chain reaction was used to detect the mRNA expression of *TEL-AML1* before and after exposure, and western blotting was used to analyze protein levels of TEL-AML1 before and after exposure. Inhibitory concentrations of 50% of cells in the Jurkat and CEM cells at 24 h were 382 and 9 μ M, respectively, and at 48 h they were 216 and 2 μ M. The proliferation inhibition effect of dexamethasone sodium phosphate on Jurkat cells was much lower than that on CEM cells. Jurkat cells showed obvious apoptosis after exposure to 100 μ M dexamethasone

sodium phosphate for 48 h. In the exposed group, Jurkat cells showed higher *TEL-AML1* expression than did CEM cells ($P < 0.05$). In the unexposed group, *TEL-AML1* gene expression in Jurkat cells was not affected by GC exposure ($P > 0.05$), while the CEM cells presented significant differences before and after exposure ($P < 0.05$). Sustained high expression of *TEL-AML1* participated in and maintained the occurrence of GC resistance. Inhibition of *TEL-AML1* may provide a new therapeutic approach to reverse GC resistance.

Key words: Cell line; GC-resistant; GC-sensitive; Leukemia; *TEL-AML1* fusion gene