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Abstract

PURPOSE:
The purpose of the present study was the investigation of antileukemic effect of amiodarone in leukemia P388 BDF1 bearing mice and its genotoxic and cytostatic effect in cultured normal human lymphocytes.

METHODS:
Leukemia P388 was used in this study. BDF1 mice were used for chemotherapy evaluation in vivo. The antitumor activity was assessed by the oncostatic parameter T/C, representing the increase of life span of drug-treated animals vs. controls. Lymphocyte cultures were used to study the genotoxic and cytostatic effect in vitro, expressed by enhanced sister chromatid exchange (SCE) and reduced proliferation rate indices (PRIS).

RESULTS:
Amiodarone was found to exert antileukemic potency against leukemia P388 bearing mice at all three different treatment schedules used, yielding T/C values of 155%, 163% with one cure and 230%. In the in vitro cytogenic experiments, significant increase of SCE rates by amiodarone was observed at 0.2 μM, while at the same concentration significant suppression of PRIS was achieved.

CONCLUSION:
According to the National Cancer Institute (NCI), a compound is characterized as potential chemotherapeutic deserving further evaluation if it produces T/C values $\geq 125\%$. On the other hand, the SCE assay has predictive value as a clinical assay for drugs exhibiting a strong correlation between cell killing and induction of SCEs. Further studies are warranted to clarify the structure-activity relationship of amiodarone.

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