Evaluation of the antitumor activity of amiloride in peripheral T-cell lymphomas using *in vitro* models

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Background

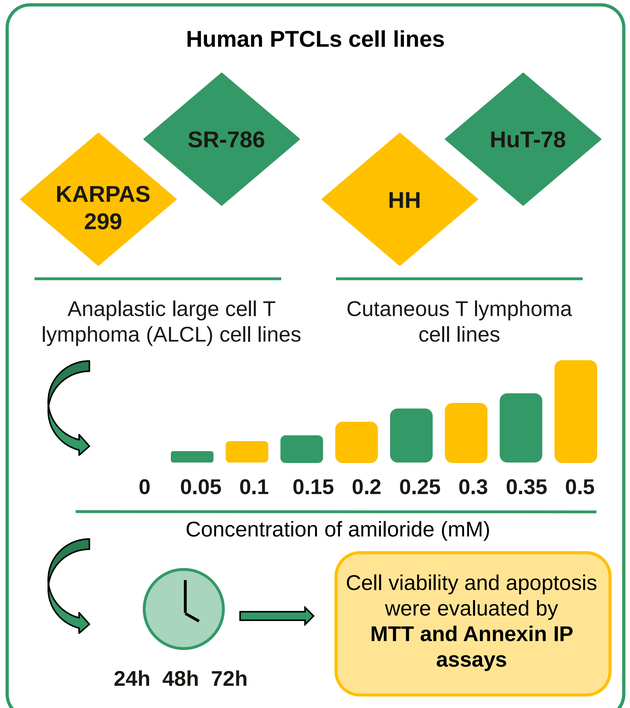
Peripheral T-cell lymphomas (PTCLs) have an aggressive clinical behavior and poor response to current treatments; therefore, the search for new drugs for these PTCLs is still required.

Our research group has previously demonstrated the antitumor activity of amiloride, a potassium-sparin diuretic, in multiple myeloma (MM). This prompted us to investigate the cytotoxic effect of amiloride in PTCLs.

Aim

To evaluate the antitumor activity of amiloride in different PTCL by *in-vitro* assays.

Methodology

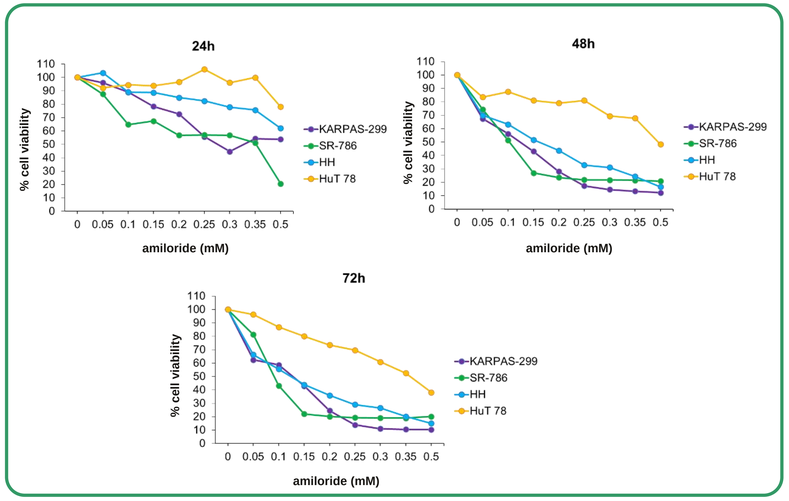


Results

Amiloride significantly inhibited the cell growth of the all PTCLs cell lines in a dose- and time – dependent manner. Specifically, the cell viability was significantly reduced (p<0.05) in KARPAS-299, SR-786 and HH cell lines from 0.15mM of amiloride at 24, 48 and 72 hours; whereas HuT-78 required higher doses and a longer time exposure.

KARPAS-299 and SR-786 cell lines were the most sensitive to the amiloride exposure. Although the HuT-78 cell line was the less sensitive, its cell viability decreased to levels below 50% and 40% after 48 and 72 hours, respectively, using the highest amiloride concentration.

Amiloride induced significant apoptosis in all PTCLs cell lines after 24 hours, reaching levels up to 50%.



Conclusions

- Amiloride significatly decreased the cell viability of PTCL.
- Anaplastic large cell T lymphoma cell lines were the most sensitive to amiloride.
- The cytotoxic effect of amiloride in PTCL was mediated by apoptosis.

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