[Apoptosis of ovarian carcinoma cell line induced by amiloride].


Source

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Abstract

OBJECTIVE:

To investigate induction of apoptosis and its possible mechanism in amiloride-treated ovarian carcinoma cell line.

METHODS:

Morphological changes of apoptotic cells were investigated by light and fluorescence microscopy. DNA fragmentation was analysed by agarose gel electrophoresis. In addition, the number of hypodiploid cells (apoptotic cells) was quantitatively assessed by flow cytometry and intracellular pH was also analysed.

RESULTS:

Amiloride-treated ovarian carcinoma cells showed morphological characteristics of apoptosis. A ladder-like pattern of DNA fragmentation was demonstrated on agarose gel electrophoresis. Amiloride at 0.01-5 mumol/L could induce apoptosis in 18.7%-61.6% of ovarian carcinoma cells. The apoptosis-inducing effect of amiloride was dose- and time-dependent. In addition, amiloride induced intracellular acidification in a subpopulation of the treated cells. Furthermore, these isolated acidified cells revealed chromatin condensation as well as DNA degradation with characteristics of apoptosis. There was good correlation between apoptotic cells and acidic cells.

CONCLUSION:

Amiloride triggers apoptosis of ovarian carcinoma cells; intracellular acidification may be involved in the mechanism of apoptosis.