Carcinoma gástrico poderia ser tratado com citrato

Citrate Induces Apoptotic Cell Death: A Promising Way to Treat Gastric Carcinoma?

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Abstract

Gastric carcinoma is frequent, particularly in China, and therapy is often inefficient. Because cancer cells are partly or mainly dependent on glycolysis to generate adenosine triphosphate ATP (Warburg effect) and/or to produce precursors (of lipid, nucleotides, etc.) for building new cells, any inhibition of glycolysis may slow down the cell proliferation and/or may kill cells. The antitumor effect of citrate, an anti-glycolytic agent inhibiting phosphofructokinase (PFK) was tested on two human gastric carcinoma cell lines. Materials and Methods: Cell viability and morphology were assessed after 24–72 h exposure to citrate (5, 10, 220 mM). Apoptosis was assessed by annexin V–FITC/PI staining and Western immunoblotting. Results: A 3-day continuous exposure to citrate led to near destruction of the cell population in both cell lines, apoptotic cell death occurred through the mitochondrial pathway in a dose- and time-dependent manner, associated with the reduction of the anti-apoptotic Mcl–1 protein in both lines. Conclusion: Citrate
demonstrates strong cytotoxic activity against two gastric cancer lines, leading to an early diminution of expression of Mcl-1 and to massive apoptotic cell death involving the mitochondrial pathway.