Resistance to Anoikis Alters the Proliferation and Adhesion in Endothelial Cells in Culture

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Neoplastic cells even in the absence of growth factors, ignore growth restrictions imposed by different parts of the body, specially by neighboring normal cells. In recent years has been studied, the mechanisms that control the positioning of the cell, their adherence to the neighbors and even their migration to distant tissues. The cell adhesion molecules belong to a group of glycoproteins that are associated with the cell membrane. In this study, endothelial cells derived from rabbit aorta (EC) were subjected to transformation induced by blockade of adhesion to the substrate (adh-EC) by sequential cycles of forced anchorage impediment. After one deadhesion cycle, phenotypic alterations were observed in the few surviving cells, which became more numerous and showed progressive alterations after each adhesion impediment step. EC cells and adh-EC clones were injected subcutaneously in \textit{nude} mice to test the tumorigenic capacity. After 20 days, tumor development was observed in mice injected with adh-EC clones. Apoptosis was detected by Annexin V-FITC/PI double staining method. The adh-EC clones showed a decrease in the number of apoptotic cells compared to EC cells. Also, an increase in adhesion on fibronectin, laminin and collagen IV was observed in adh-EC clones. For proliferation and cell cycle assays, BrdU and propidium iodide were incorporate to DNA, respectively. Adh-EC clones display morphological changes, much deregulation of cell cycle, becoming more densely populated and serum-independent. The PI3K/AKT pathway is also altered in adh-EC cells, similar to the data found in neoplastic transformation.

Word Keys: Anoikis, endothelial cells, PI3K/AKT pathway.
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