Heat shock and cytokines modulate the expression of adhesion molecules in different human gastric cancer cell lines

謝茂志

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摘要

Abstract

In order to understand the expression and modulation of adhesion molecules (AMs) on the surface of different gastric cancers, we studied 4 gastric-cancer cell lines including SC-M1, KATO-III, AGS and AZ-521. The expression of E-cadherin, integrins (beta1, beta2 and beta3), ICAMs (1 and 2), and CD11 (a, b and c) on the cells was detected by flow cytometry. We found that E-cadherin was only expressed on SC-M1 and KATO-III. CD29 (beta1 integrin) could be found in cells of all 4 lines. CD54 (ICAM- 1) could not be detected in AZ-521. In contrast, CD18 (beta2 integrin), CD61 (beta3 integrin), ICAM-2, CD11a, CD11b and CD11c were all absent from these cells. Heat-shock treatment (42.5 degrees C, 60 min) enhanced the expression of E-cadherin, CD29 and CD54 on SC-M1, and of CD29 on AGS. In addition, TNF-alpha (50U/ml) and IL-1beta (10U/ml) modulated the expression of these AMs, like heat-shock treatment. The increment of these adhesion molecules caused by heat shock, TNF-alpha and IL-1beta stimulation on SC-M1 was also confirmed by Western blot analysis. Functionally, these treatments increased the binding between normal human mononuclear cells and SC-Ml cells. The heat-shock treatment could induce a significant amount of TNF-alpha and IL-1beta release from SC-M1 and KATO-III, but seemed irrelevant to the expression of AMs. These results suggest that limited adhesion molecules were expressed on the surface of different gastric cancer cells. Heat shock, IL-1beta and TNF-alpha may selectively modulate the expression of these 3 molecules on some of the cells, and this is probably related to their antitumor effect.

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