The possible role of soluble intercellular adhesion molecule in cancer metastasis

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Abstract

The adhesion molecules are involved in not only inflammatory reactions, but also tumor progression. Intercellular adhesion molecule (ICAM)-1 plays a role in tumor cell adhesion to the vascular endothelium, which helps extravasation of tumor cells and the development of metastases. Alternative splicing by proteolytic enzymes generates different isoforms of ICAM, including the soluble form of ICAM-1 (sICAM-1). The elevated levels of sICAM-1 are reported to evade immune recognition of tumor cells and are associated with poor prognosis. On the other hand, leptin, which is mainly secreted by adipocytes, is also produced by a variety of tumor cells. Leptin receptor expression is also observed to be elevated in several types of tumors and is associated with the development of metastasis. In our study, we found that leptin induced soluble ICAM-1 secretion but not surface ICAM-1 expression in lung cancer cells. The leptin-induced sICAM-1 production was regulated by leptin receptor (ObR) through JAK/STAT/FAK signaling pathway in lung cancer cells. Moreover, we found that leptin-induced sICAM-1 secretion in lung cancer enhanced osteoclasts differentiation, indicating a role for lung cancer bone metastasis. Based on these findings, the underlying mechanism of leptin-induced sICAM-1 expression would suggest new insights into the development of improved clinical therapies and the development of diagnostic/prognostic biomarker.

Biography

Wei-Lan Yeh has completed her PhD from National Taiwan University and Postdoctoral Studies from Harvard University and Massachusetts General Hospital, Boston, MA. Wei-Lan Yeh is now the faculty of Institute of new drug development, China Medical University, Taiwan. Wei-Lan Yeh has published more than 25 papers in reputed journals ad has been serving as an editorial board member of repute.

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