EFFECT OF IL-2 ON THE ACTIVATION OF STAT5 AND JAK3 IN CERVICAL CARCINOMA CELL LINES

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Introduction: The IL-2 receptor has been found to be expressed on non haematopoietic cells, especially in several types of solid tumours. Recently it has been shown that cervical cancer cells express this receptor and that IL-2 induces its proliferation. We have shown that in IL-2R expressing cervical cancer cells, the constitutive activation of JAK3 and STAT5 increases in the tumour cells while the opposite effect occurs in normal lymphocytes.

Objective: We decided to treat different cervical carcinoma cell lines with high or low doses of IL-2 to analyze its effect on the phosphorylation of JAK3 and STAT5, as well as the JAK3 translocation to nucleus.

Materials and Methods: The cervical cancer cell lines were treated with 10 or 100UI/mL of IL-2 for different periods of time. The activation of JAK3 and STAT5 was analyzed by Western Blotting; the translocation to the nucleus was determined by Western Blot and by flow cytometry of isolated nucleus.

Results: Our results show that the treatment of cervical cancer cells with low doses of IL-2 induces an increase in the phosphorylation of STAT5 and JAK3, nevertheless, with high doses of IL-2 the phosphorylation of JAK3 decreases. We also observed that treatment with low doses of IL-2 induces the translocation of pJAK3 to the nucleus.

Conclusion: The role of pJAK3 in the nucleus is unclear, however, it could be possible that JAK3 translocates into the nucleus to activate the STATs to increase the response to IL-2 and to induce proliferation.

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