

Effects of cyclooxygenase inhibitors in combination with taxol on expression of cyclin D1 and Ki-67 in a Xenograft model of ovarian carcinoma

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Background: Numerous studies have demonstrated that cyclooxygenase (COX) molecules are involved in the onset and progression of a variety of malignancies and are overexpressed in ovarian cancer. The present study was designed to investigate the effects of COX inhibitors in combination with taxol on the expression of cyclin D1 and Ki-67 in human ovarian SKOV-3 carcinoma cells xenograft-bearing mice.

Methods: The animals were treated with 100 mg/kg celecoxib (a COX-2 selective inhibitor) alone, 3 mg/kg SC-560 (a COX-1 selective inhibitor) alone by gavage twice a day, 20 mg/kg taxol alone by intraperitoneally (i.p.) once a week, or celecoxib/taxol, SC-560/celecoxib, SC-560/taxol or SC-560/celecoxib/taxol, for three weeks. To test the mechanism of the combination treatment, the index of cell proliferation and expression of cyclin D1 in tumor tissues were determined by immunohistochemistry.

Results: The mean tumor volume in the treated groups was significantly lower than control ($p < 0.05$), and in the three-drug combination group, tumor volume was reduced by 58.27% ($p < 0.01$); downregulated cell proliferation and cyclin D1 expression were statistically significant compared with those of the control group (both $p < 0.01$).

Conclusions: This study suggests that the effects of COX selective inhibitors on the growth of tumors and decreased cell proliferation in a SKOV-3 cells mouse xenograft model were similar to taxol. The three-drug combination showing a better decreasing tendency in growth-inhibitory effect during the experiment may have been caused by suppressing cyclin D1 expression.

Biography

Wei Li has completed his M.D. studies from Kyoto University and Osaka City University Medicine School of Japan in March 31st 1999. During 6 years period that he learnt numerous aspects of cancer research. In recent years he has published more than 10 papers about "Effects of Cyclooxygenase Inhibitors and Ovarian Cancer in vivo" in reputed journals.

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