Chemokine receptor CXCR4 and its ligand CXCL12 expressions and clinical significance in bladder cancer


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ABSTRACT. It is well known that chemokine receptors and their ligands play important roles in mediating the invasion and metastasis of malignant tumors. This aim of this study was to investigate the expression and clinical significance of chemokine receptor CXCR4 and its ligand CXCL12 in bladder tumor tissues. Cancerous and adjacent normal bladder tissues were collected from 42 patients. The expressions of CXCR4 and CXCL12 proteins were then detected by immunohistochemistry, and the expressions of CXCR4 and CXCL12 mRNAs were detected by RT-PCR. Bladder cancer tissues showed higher positive expressions of CXCR4 and CXCL12 than those in normal bladder mucosal tissues (z = 7.332, 6.758, P < 0.001). Positive expressions of CXCR4 and CXCL12 were related to the differentiation degree and invasive depth of cancer tissues (z = 2.598-4.594, P < 0.05), but not to patient gender or age (z = 0.273-0.554, P > 0.05). The expression of CXCR4 was positively correlated to CXCL12 expression in bladder cancer tissues (r = 0.661, P < 0.05). RT-PCR revealed that CXCR4 and CXCL12 mRNAs were not expressed in normal tissues. Moreover, with increased depth of invasion, CXCR4 and CXCL12 mRNA expressions gradually increased in bladder cancer tissues.
and showed significant intergroup differences ($F = 56.642, 67.928, P < 0.01$). Taken together, these results indicate that the chemokine receptor CXCR4 and its ligand CXCL12 play important roles in the occurrence and development of bladder cancer.

**Key words:** Bladder cancer; Bladder tumor tissue; CXCR4; SDF-1; CXCL12