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649P EXPRESSION OF CXCR4 IN TUMOR AND BONE MARROW OF GASTRIC CANCER PATIENTS: ASSOCIATION WITH HYPOXIA-REGULATED INDICES, DISSEMINATED TUMOR CELLS AND SURVIVAL

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Aim: CXCR4 expression is associated with metastasis and poor outcome of various cancers but its role in gastric cancer (GC) is still unclear. This study was aimed to analyze the association of CXCR4 expression in GC and bone marrow (BM) with clinical outcome.

Methods: 65 resected tumor specimens were studied. Immunohistochemistry, NMR-spectroscopy, and zymography were used. Disseminated tumors cells (DTCs) in BM was detected by immunocytochemistry. All patients were thoroughly informed about the study. Statistical analyses were done using NCSS2000/PASS2000 and Prism (version 4.03) software packages.

Results: CXCR4 protein was expressed in 78.5% of GC specimens. It was correlated with level of tumor hypoxia (assessed by PME/Pi ratio; $r = 0.492$, $p < 0.05$), VEGF expression ($r = 0.337$, $p < 0.01$) and gelatinases activity ($r = 0.33$; $p < 0.05$). $CXCR4^+$ cells in GC was detected in 80% of patients with DTC in BM. Overall survival (OS) of patients with $CXCR4^+$-tumors was poorer than that of patients with $CXCR4^-$-tumors ($p < 0.037$). The $CXCR4^+$ cells in BM was found in 46% of all patients, and in 56% of patients with DTC. It was also detected that $CXCR4^+$ cells in BM in patients with M_0 category was detected in 63% of patients with DTC. CXCR4 expression in BM was not associated with OS. It was evaluated that in all patients with $CXCR^+$ tumors risk of unfavorable outcome increased by more a factor of 2.82 (HR = 2.82; 95%CI 1.162–6.832; $p < 0.05$). CXCR4 expression in BM was positively associated with DTC, especially in patients with M_0 category. It was observed that in patients both with M_0 category and $CXCR4^+$ BM risk of unfavorable outcome increased by a factor of 3.4 (HR = 3.4; 95%CI 1.156–12.054; $p < 0.03$).

Conclusions: CXCR4 expression in tumor was positively correlated with hypoxia and VEGF expression in tumor and OS. CXCR4 expression in BM is associated with DTC.

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