Effect of Bevacizumab, a Humanized Monoclonal Antibody to Vascular Endothelial Growth Factor, on Peritoneal Metastasis of MNK-45P Human Gastric Cancer in Mice

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Abstract:

Background. The aim of this study was to clarify the effect of bevacizumab on gastric cancer with peritoneal metastasis in nude mice. Materials and Methods. The expression of vascular endothelial growth factor mRNA (VEGF mRNA) in four gastric cancer cell lines, NCI-N87, MKN-45, MKN-45P, and Kato-III, was examined by polymerase chain reaction. We created a model of peritoneal metastasis by injecting mice with the human gastric cancer cell line MKN-45P. Mice were injected intraperitoneally with bevacizumab (0.1mg/100mL) on days 5–14, after inoculation (n=10) or with phosphate-buffered saline (PBS) over the same time period (n=10). The maximum abdominal circumference, ascites volume, and the total number and weight of peritoneal tumors were measured. To assess the effect of bevacizumab on angiogenesis, immunohistochemical analysis was performed. Results. VEGF mRNA was expressed at a high level in MKN-45P cells as well as MKN-45 and Kato-III. The mean maximum abdominal circumference and ascites volume in the bevacizumab group were significantly less than those in the control group (P

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