Adverse effect of Bevacizumab; comparison between lung cancer versus colon cancer

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Background: Bevacizumab, a recombinant humanized monoclonal antibody against vascular endothelial growth factor (VEGF), is widely used in current cancer treatments. It is the first angiogenesis inhibitor approved as a first line treatment for metastatic colorectal cancer in 2007, and it has also been approved for the treatment of advanced non-small cell lung cancer in 2009. Bevacizumab is associated with substantial adverse effects, such as hypertension, proteinuria, bleeding, and so on. However, the risk of these adverse effects reported in clinical trials has not been completely consistent. It has not ever been compared the frequency and severity of the adverse effects in tumor types or dose differences. To address this issue, we compared adverse effects of bevacizumab between lung cancer and colon cancer.

Methods: We retrospectively analyzed lung cancer patients who received bevacizumab in Kansai Medical University Hospital between 2009 to 2014, and colon cancer patients who received between 2007 to 2014.

Results: In 317 lung cancer patients (median age: 68 years), median treatment period was 265 days. Adverse effects were proteinuria (38%), bleeding (20%), hypertension (8%), and severe adverse effects including perforation or arterial and venous thromboembolic events were observed in 5% patient. In 247 colon cancer patients (median age: 67 years), median treatment period was 287 days. Adverse effects were proteinuria (46%), hypertension (12%), and severe adverse effects were seen in 1% patient.

Conclusions: Treatment period was longer in colon cancer patients because it is allowed to use bevacizumab beyond progression of the disease. In adverse effects, proteinuria was seen in both cancer. Bleeding was seen more in lung cancer, although hypertension was more in colon cancer. These differences might be caused by the difference of dose or patient’s background. We will report the some factors which influence to the adverse effects.