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Pitfalls with Bevacizumab and Brain Metastasis

*Habib Nourani Khojasteh**

Department of Internal Medicine, Nemazi Hospital, Shiraz University of Medical Sciences, Shiraz-Iran

Editorial

Brain metastasis is a common medical entity; and occurs in near 40% of advanced cancer patients. Controlling of brain metastasis is important from the aspects of neurological morbidity and increasing overall survival; resistant mechanisms seen in biology of metastasis and problems of blood brain barrier (BBB) is the major obstacles in handling of this disease with a poor prognosis clinical course; blood brain barrier limits the passage of large molecules and hydrophobic drugs to brain but the metastatic brain lesions specifically disrupt BBB and helps to availability of antitumor drugs in the sites of the target lesions.

Recently Bevacizumab, a humanized monoclonal antibody that inhibits vascular endothelial growth factor and controls tumor angiogenesis is a new therapeutic option in central nervous system metastatic tumor disease. Historically it is used in cancers of lung, brain, ovary, colorectal and renal tumors; in one study Bevacizumab has the potential to prevent brain metastasis in lung adenocarcinoma. It can pass BBB despite high molecular weight so the Bevacizumab is still an interesting in cancer practice because of efficient antitumor effects in brain. It has been approved by federal drug administration for glioblastoma with high response rate and less risk of brain hemorrhage because of this Bevacizumab and glioblastoma of brain is the best model of the normal brain and abnormal brain reaction to this antiangiogenesis drug [1,2].

With successful Using of Bevacizumab in treatment of primary brain tumors, the data showed safety of this drug in using metastatic brain disease regarding brain hemorrhage. Combination therapy with bevacizumab and irinote can have response rate and extend survival rate in a group of metastatic brain with colorectal cancers and leads to no any brain hemorrhage [3,4].

But how much is the risk of brain hemorrhage with bevacizumab and brain metastasis? It needs to be cautious in every patients with active brain metastasis; Bevacizumab may rarely cause blood clots (such as pulmonary embolism, stroke, heart attack, deep vein thrombosis the risk is high with other thrombogenic conditions and also with concomitant risk of bleeding.

Is it necessary to do brain image before bevacizumab in metastatic settings? It seems that if the patient with cancer is on anticoagulation such as heparin and warfarin and it is a therapeutic plan to use bevacizumab, this is mandatory to do a brain image before starting bevacizumab because of risk of tumor hemorrhage is high. Overall the research on the brain metastasis and bevacizumab is a growing field of cancer science and it needs many more clinical trials in future to open the truth of this molecule in brain [5,6].

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Correspondence:
Habib Nourani Khojasteh, Department of Internal Medicine, Hematology Research Center, Nemazi Hospital, Shiraz University of Medical Sciences, Shiraz-Iran,
E-mail: habib.noorani31@yahoo.com

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