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INCREASED RISK OF CARDIAC ISCHEMIA AND ARTERIAL THROMBOEMBOLIC EVENTS IN CANCER PATIENTS TREATED WITH BEVACIZUMAB: A META-ANALYSIS

ACC Poster Contributions
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Authors: *Vishal Ranpura, Jeff Chuang, Shenhong Wu, Stony Brook University Hospital, Stony Brook, NY*

Background: Bevacizumab was found to increase the risk of arterial thromboembolic events (ATE) in a limited group of cancer patients from 5 randomized controlled trials (RCTs). In order to better understand the risk of ATE associated with bevacizumab, a systematic review and meta-analysis of published RCTs was performed.

Methods: We searched the databases of PubMed and Web of Science for articles published from January 1966 until June 2009 and abstracts presented at American Society of Clinical Oncology conferences held between January 2000 and June 2009 to identify relevant clinical trials. Eligible studies included prospective RCTs in which bevacizumab was compared to a control concurrently with standard anti-neoplastic therapy. Summary incidence rates, relative risks (RRs), and 95% confidence intervals (CIs) were calculated using random-effects or fixed-effects models based on the heterogeneity of the included studies.

Results: A total of 12,617 patients with a variety of advanced solid tumors from 20 RCTs were included for analysis. The incidences of all-grade and high-grade ATE in patients receiving bevacizumab in combination with standard anti-neoplastic therapy were 3.3% (95% CI, 2.0-5.6%) and 2.0% (95% CI, 1.7-2.5) respectively. When compared to a control, patients treated with bevacizumab had a significantly increased risk of ATE with an RR of 1.44 (95% CI, 1.08-1.91; p = 0.013). The risk was similarly increased for bevacizumab at 2.5 mg/kg/week (RR, 1.52; 95% CI, 1.10-2.09) and 5 mg/kg/week (RR, 1.50, 95% CI, 0.84-2.69). In addition, significantly increased risks were observed in patients with renal cell cancer (3.72, 95% CI, 1.15-12.04; P=0.029) and colorectal cancer (1.89, 95% CI, 1.280-2.797, p= 0.001). Furthermore, bevacizumab was associated with significantly increased risk of myocardial infarction with an RR of 2.14 (95% CI, 1.12-4.08, p=0.021).

Conclusion: Bevacizumab significantly increased the risk of developing cardiac and other arterial thromboembolic events in cancer patients. Further studies are recommended for risk reduction.