ACC.12
61st Annual Scientific Session & Expo
ACC-i2 with TCT innovation in intervention

E1246
JACC March 27, 2012
Volume 59, Issue 13

Imaging

ECHOCARDIOGRAPHY ASSESSMENT OF THE IMPACT OF BEVACIZUMAB ON SYSTOLIC AND DIASTOLIC FUNCTION OF LEFT VENTRICLE IN PATIENTS WITH METASTATIC CANCER

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Saturday, March 24, 2012, 11:00 a.m.-Noon

Session Title: Imaging: Echo Early Detection of Myocardial Disease
Abstract Category: 22. Imaging: Echo
Presentation Number: 1092-71

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Background: Bevacizumab, a recombinant humanized monoclonal antibody against vascular endothelial growth factor (VEGF) that is used widely in the treatment of metastatic cancer, is associated with increased incidence of cardiovascular events. The purpose of this study was to assess the impact of bevacizumab administration on left ventricular function of patients with metastatic breast or colorectal cancer.

Methods: We enrolled 147 consecutive patients with colorectal or breast cancer in our study, 76 patients with combination therapy that included bevacizumab and 71 with combination therapy without bevacizumab. Both groups were estimated by echocardiography at baseline, at 6 and at 18 months after initiation. The follow up included 2 dimensional echo, M-mode measurements and Tissue Doppler Imaging as well.

Results: In bevacizumab group, Systolic myocardial motion (Sa) was significantly lower at 6 months (10.93±4.64 versus 9.90±3.59 cm/s, p=0.0007), and remained significantly lower at 18 months (10.93±4.64 versus 9.03±9.56 cm/s, p=0.003). Regarding indexes evaluating the diastolic function, E/E' ratio [Early rapid filling wave (E), mitral annulus early diastolic motion (E')], significantly increased both at 6 months (5.83±2.53 versus 7.86±3.45, p=0.0005), and at 18 months follow up (5.83±2.53 versus 7.84±3.45, p= 0.004). In the control group, the mean value of Sa at baseline was similar at 6-month follow up (9.02±4.26 versus 8.87±3.80 cm/sec, p=0.17) and at 18-month follow up (9.02±4.26 versus 9.10±4.21cm/sec, p=0.06). Accordingly, there was no difference in E/☒' ratio between baseline and 18 months (6.79±2.56 versus 6.81±2.62, p=0.15). All other echocardiography measurements had no difference in follow up, in both groups.

Conclusion: The addition of bevacizumab in the conventional scheme of chemotherapy has a direct unfavourable impact on both left ventricular diastolic and systolic function.