Influence of Bevacizumab on Colorectal Cancer Mortality

Paul A. J. Baillargeon, D.O.1, John H. Grider, Sr, D.O.1,2, Jane C. Johnson, M.A.2, Nick Hopson, OMSIV2

1 Northeast Regional Medical Center, Kirksville, MO
2 ATSU-Kirksville College of Osteopathic Medicine, Kirksville, MO

Background: Bevacizumab, a humanized monoclonal antibody against vascular endothelial growth factor, demonstrated significant survival benefit when it was added to the historic standard-of-care in chemotherapy in 2004. Clinical trials of Bevacizumab have shown significantly increased survival (hazard ratios (HR)>1.3) in small trials.

Methods: Using the Surveillance, Epidemiology, and End Results (SEER) database, we evaluated survival in 392,002 cases of colorectal cancer (CRC) between 1988 and 2009. The cases were grouped by year of diagnosis (1988-1999, 2000-2001, 2002-2003, 2004-2009) and stratified by American Joint Committee on Cancer stage (3rd and 6th editions). Cox proportional hazards models were used to compare the year groups on overall and disease-specific survival with a maximum 5-year follow-up.

Results: For stage 3 CRC, the overall survival time for those diagnosed in 2004-2009 was significantly longer (P<.0001) than those diagnosed in 1988-1999 (HR=1.41), 2000-2001 (HR=1.28), and 2002-2003 (HR=1.19). For stage 4 CRC, the overall survival time for those diagnosed in 2004-2009 was significantly longer (P<.0001) than those diagnosed in 1988-1999 (HR=1.38), 2000-2001 (HR=1.28), and 2002-2003 (HR=1.21). Results for disease-specific survival were similar.

Conclusions: Compared to previous studies, our results indicate a slightly decreased mortality in patients with stage 3 and 4 colorectal cancer after the introduction of Bevacizumab in 2004.

Responsible Author: John Grider, D.O., JGrider@atsu.edu

Key words: Bevacizumab; colorectal cancer; mortality