Outcome Disparities for Invasive Breast Cancer in Southeast Rural Communities May Be Related to Delays in Treatment

James McLoughlin1, Amila Orucevic1, Jillian Lloyd1, R. Eric Heidel1

1University of Tennessee Medical Center, Knoxville, TN

INTRODUCTION

Rural communities in the Southeast, defined as counties with an urban population of 2,500 or less, are often in disparate regions based on socioeconomic status and cancer outcomes. National data were analyzed to determine demographic factors associated with poorer cancer outcomes in these rural counties.

METHODS

The NCDB (National Cancer Database) was analyzed for breast cancer outcomes from 1998–2012. The analysis was primarily focused on rural counties in the South Atlantic and East South Central Regions, which include the majority of the counties in Appalachia. Multivariate analyses were performed to evaluate the clinical and economic factors in breast cancer outcomes in these regions.

RESULTS

From 1998–2012, over 2.8 million patients with invasive breast cancer were evaluated with 581,514 in the South Atlantic and East South Central regions. Of those, 12,515 (2.2%) were from rural counties. Those in metro counties (greater than 50,000 population) were 15% less likely to die than those in rural counties. The median survival for rural counties was 162 months (95% CI, 156–168) vs metro counties, which was 178.5 months (95% CI, 177–179). When comparing the time of diagnosis to the time treatment began and was completed, there were more delays in initiating and completing treatment in those from rural counties compared to metropolitan counties and the delays resulted in a 0.1% increase in dying per day of delay. In other words, for every 100 days of delay, there is a 10% increase in the chance of dying. Additional impacts on mortality included socioeconomic factors, including median household income and highest education level achieved (see table).

CONCLUSIONS

In the South Atlantic and East South Central Regions, significant delays in initiating and completing treatment for invasive breast cancer patients in rural counties demonstrated evidence of being associated with disparate outcomes. A lack of resources both for the individual patient and communities as well as the regional education status appears to contribute to these delays. Improvements in breast cancer outcomes in these rural counties may be best focused on creating and supporting satellite clinics, community outreach, and mobile cancer screenings.