Outcomes disparities for invasive breast cancer in rural communities are not related to delays in treatment

Introduction: Rural communities in the Southeast, defined as counties with a population of 2,500 or less, are often in disparate regions based on socioeconomic status and cancer outcomes. National data was analyzed to determine the factors most responsible for poor cancer outcomes in these rural counties.

Methods: The NCDB (National Cancer Data Base) 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 Southeast region. Of those, 12,515 (2.2%) are from rural counties. Those in rural counties were 15% more likely to die than those in urban and metro counties. The median survival for rural counties was 162 months (95% CI 156 – 168) vs. urban 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. However, the delays resulted in a 0.01% increase in dying per day of delay. In other words, for every 100 days of delay there is a 1% increase in the chance of dying. The greatest impact on mortality appeared to be related to socioeconomic factors including median household income and highest education level achieved.

Conclusion: Despite concerns of lack of access to healthcare in rural communities, moderate delays in initiating and completing treatment for breast cancer do not appear to contribute to the observed disparate outcomes. Improvements in breast cancer outcomes may be best focused on secondary school graduation rates and improved regional economics.

Biography
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