

Prognostic factors in diabetic and non-diabetic patients with breast cancer

D Arora¹, S Hasan¹, E Male¹, J Pruszynski¹, C Ord², A Bhat¹, A Rao¹ and N Deb¹

¹Baylor Scott & White Memorial Hospital, USA

²University of Arizona College of Medicine, USA

Background: Breast cancer patients with diabetes have been shown to have an increased risk of overall mortality. Metformin use has been associated with improved survival. Still, there are other known risk factors such as stage, age, and pathology which influence breast cancer outcomes. The purpose of this study is to identify prognostic factors in breast cancer patients with and without diabetes.

Methods: We retrospectively reviewed a cohort of patients from a single institution (n=394) that received standardized, multi-disciplinary care for their breast cancer. Overall survival (OS) and recurrence free survival (RFS) were estimated by the Kaplan-Meier method. Cox proportional hazard regression models were utilized to determine different covariates on the risk of death and recurrence for diabetic and non-diabetic patients. Metformin use, age, surgery type, receptor status, BMI, and pathological features were also analyzed.

Results: Median follow-up for living and deceased patients was 9 and 5 years, respectively. 337 patients were identified as non-diabetic and 57 patients were diabetic. The two groups did not differ significantly in age, race, receptor status, surgery type, number of nodes, LVSI, tumor stage, and overall stage. The diabetic group had significantly more grade 2 and 3 histology and higher BMI. There was no difference in OS or RFS between non diabetic and diabetic patients (p= 0.879 and p=0.065 respectively). Metformin usage was not found to affect overall survival or recurrence free survival.

On multivariate analysis, significant predictors for OS included age, surgery type, ratio of positive nodes, and ECE. Significant predictors of RFS were surgery type, positive nodes, ECE, and grade. For every percent increase in ratio of positive nodes, the risk of death was increased by 1%. Those with ECE had a 3.31 fold increased risk of death. Patients with grade 3 were twice as likely to have a recurrence verses grade 2. For every 1 year increase in age, the risk of death increased by 1.9%.

On univariate analysis, underweight patients (BMI<18.5) had a 28.5% increased risk of recurrence and obese patients (BMI > 30) had a 40% increased risk of recurrence verses normal weight patients.

Conclusions: Unlike previous studies, we found no difference in OS in breast cancer patients with and without diabetes, as well as no difference with and without metformin use. Given the worse outcomes seen with age, BMI, ECE, grade 3, ratio of positive nodes (%), we recommend that these features be utilized as prognostic determinants to guide treatment decisions when applicable.

Biography:

Divya Arora graduated with a Bachelors of Science in Nutrition at the University of Florida. She obtained a Masters of Biomedical Science at Tufts University. She completed by medical school at the University of South Florida in Tampa. She is now a PGY4 resident at Baylor Scott and White in Radiation Oncology. Her research interests include stereotactic radiosurgery and breast cancer.