Introduction

- Survival for mastectomy with reconstruction is comparable to mastectomy alone
- Rural-urban differences exist in access to care for breast cancer patients
- Delaying time to surgery from diagnosis is adversely associated with survival
- Evaluated effect of rural-urban status on time to surgery in patients undergoing mastectomy with or without reconstruction, and overall survival

Methods

- National Cancer Database (NCDB) study
- Patients diagnosed 2003 - 2007 with 5 years follow up.
- Mastectomy alone (MAST) or mastectomy with reconstruction (MWR)
- Demographic differences and outcomes were evaluated

Figure 1: Rural-Urban Continuum Code

Demographic disparities = MWR compared to MAST
- Younger, healthier, more educated, wealthier
- Treated at academic centers more frequently
- Held more private insurance.

Clinical/treatment disparities = MWR compared to MAST
- Lower stage
- More received hormonal therapy

Figure 2: Time to surgery and travel characteristics

Overall time disparities
- MAST vs MWR
  - 9 days earlier for MAST
  - Urban vs rural
  - 4 days earlier for rural
  - Longest: 36 days urban MWR

Surgery within 30 days
- MAST vs MWR
  - 67% vs 45%
  - Rural vs urban
  - 8% more in rural

Distance to center
- MAST vs MWR
  - Shorter for MAST
  - Rural vs urban
  - Shorter for urban
  - Longest: 46 miles rural MWR

Figure 3: Improved survival in patients MWR compared to MAST (p<0.001)

Unadjusted survival analysis

Adjusted survival analysis

Figure 5: Survival analysis for mastectomy type by time to surgery. Mastectomy alone is reference.

Surgery timing (days after diagnosis) Hazard Ratio (95% CI)

- All
- 0-30: 0.58 (0.52-0.66)
- 31-60: 0.68 (0.62-0.75)
- 61-90: 0.58 (0.47-0.71)
- 91-120: 0.41 (0.27-0.63)
- 121-180: 0.43 (0.22-0.83)
- 181+: 0.39 (0.19-0.83)

Figure 6: Survival analysis for rural vs urban status by mastectomy type. Urban is reference.

Surgery Hazard Ratio (95% CI)

- Mastectomy Alone 0.96 (0.93-1.00)
- Mastectomy with Reconstruction 1.36 (0.96-1.92)

Conclusions

- Delayed in time to surgery for mastectomy with reconstruction.
- Several areas of disparity amenable to future improvement: income, education, healthcare facilities and insurance type
- Mastectomy with reconstruction has improved survival compared to mastectomy alone
- No significant rural-urban disparity in survival between types of mastectomy

Figure 4: Rural patients with MAST had worse survival compared to urban. No difference between rural and urban patients in the MWR cohort