A Rising Trend in Use of Contralateral Prophylactic Mastectomy: Does the Decision to Undergo Immediate Reconstruction Play a Role?

Shailesh Agarwal, MD; Kelley Kidwell, PhD; Casey T. Kraft, BSc; Jeffrey H. Kozlow, MD; Michael Sabel, MD; Kevin C. Chung, MD, MS; Adeyiza O. Momoh, MD

PURPOSE: Multiple patient predictors have been identified that increase the likelihood of patients making the choice to undergo CPM. However, the role of reconstruction on this complex but important patient choice is unclear. This study assesses the previously unknown relationship between patients' decision to undergo breast reconstruction and their decision to undergo contralateral prophylactic mastectomy (CPM).

METHODS: The Surveillance, Epidemiology and End Results (SEER) database was used to identify female patients with stage I-III unilateral breast cancer treated with mastectomy from 2000-2010. Demographics and oncologic characteristics, reconstruction status (yes/no), and decision to undergo CPM were extracted (yes/no). Separate bivariate logistic regression models were developed including 1) all patients who underwent unilateral mastectomy +/- CPM, or 2) all patients who underwent unilateral mastectomy with reconstruction +/- CPM, to evaluate factors associated with odds of CPM.

RESULTS: A total of 157,042 patients with stage I-III unilateral breast cancer were treated with mastectomy; 26,418 patients (16.8%) underwent CPM. CPM rate among patients undergoing mastectomy increased from 7.7% in 2000 to over 28% in 2010 ($p<0.001$). The proportion of reconstructed patients who underwent CPM increased from 18.6% to 46.5% ($p<0.001$). The increase in CPM was highly correlated with an increase in immediate reconstruction ($r = 0.97$, $p<0.001$). Chi-square analysis showed a significant difference in reconstruction rates of patients with CPM (46.1%) and those without CPM (16.6%) ($p<0.001$). Logistic regression showed that patients who underwent reconstruction had higher odds of CPM (OR 2.9, 95% CI [2.8-3.0]). Separate logistic regression model with reconstructed patients only showed that patients who had implant-based reconstruction had significantly higher odds of CPM than patients with autologous tissue reconstruction (O.R. 1.38 v. 1.00).

CONCLUSIONS: Our data suggests that the decisions to undergo CPM and immediate reconstruction are inextricably linked. There has been over a 2-fold increase in the percentage of reconstructed patients who choose to undergo CPM, even as the percentage of reconstructed patients continues to increase. Further patient-level inquiry is being performed to determine whether patients' desire to undergo CPM is influenced by access to reconstruction, or *vice versa.*

Figure: The percentages of mastectomy patients undergoing reconstruction (black) or undergoing CPM (grey) are increasing and converging.