New Use for an Established Big Data Set: Applying the National Cancer DataBase (NCDB) Participant User File to a Local Population

White-Gilbertson S[1], Xiao C[2], Cope L[1], Day TA[2]

Medical University of South Carolina, [1]Hollings Cancer Center Cancer Registry and [2]Department of Otolaryngology-Head and Neck Surgery

Introduction to Treatment Trends for Stage IV Oral Cavity and Pharyngeal Cancers

In the last 10 years, survival rates for patients diagnosed with Stage IV head and neck cancer have increased at the Medical University of South Carolina. Using the Hollings Cancer Center Registry, we described local trends in treatment patterns. Here, MUSC data are pooled into the indicated time periods due to sample size. The NCDB allowed us to study the national picture for this population between 1998 and 2012 (total n=149,940 with n=58,835 from base of tongue or tonsillar sites). A strong trend toward trimodal therapy was seen locally and nationally and correlates with improved survival. Below, C=Chemo, R=Radiation, S=Surgery.

Chemotherapy Added to Treatments Over Time

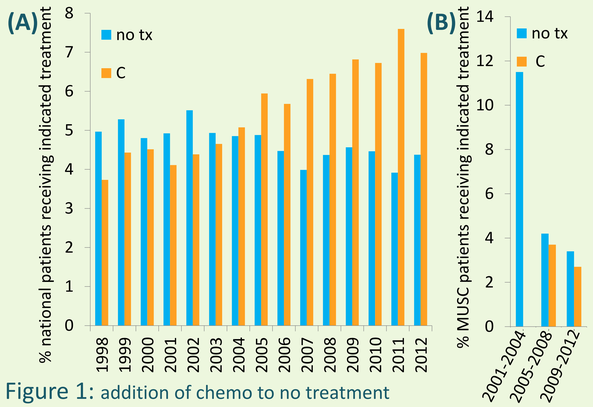

Figure 1: addition of chemo to no treatment

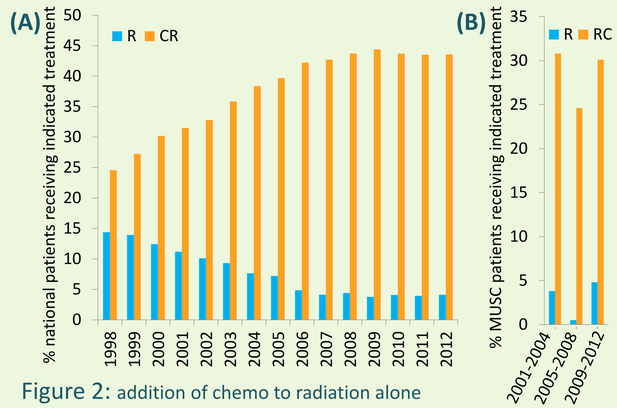

Figure 2: addition of chemo to radiation alone

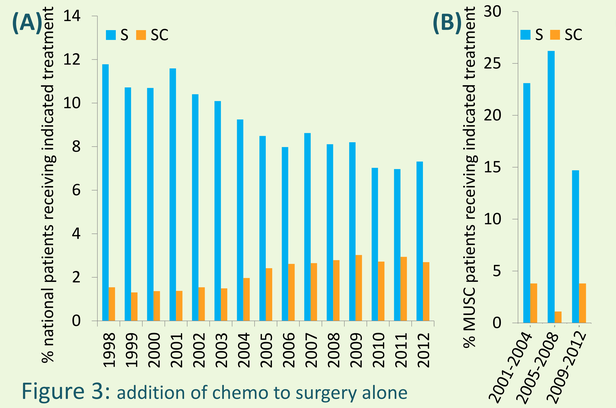

Figure 3: addition of chemo to surgery alone

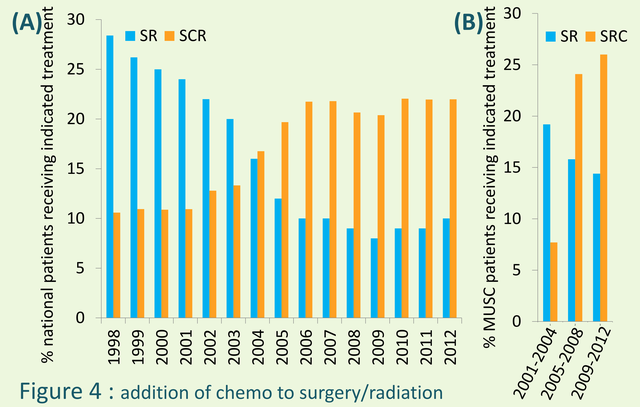

Figure 4 : addition of chemo to surgery/radiation

National 5 Year Survival by Treatment

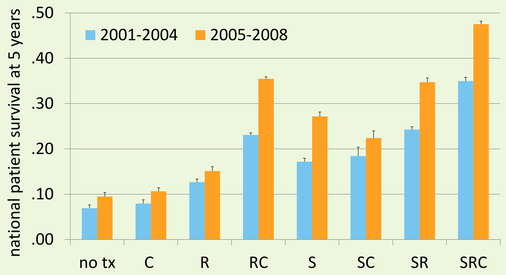

Figure 5 : effect of treatment trends on survival at national level

National 5 Year Survival for Oropharynx

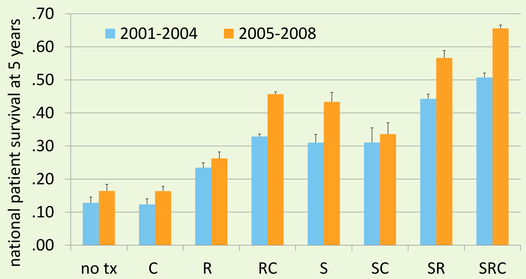

Figure 6 : base of tongue and tonsil sites analyzed for survival

MUSC Rates of Survival for Stage IV Oral Cavity/Pharyngeal Cancer

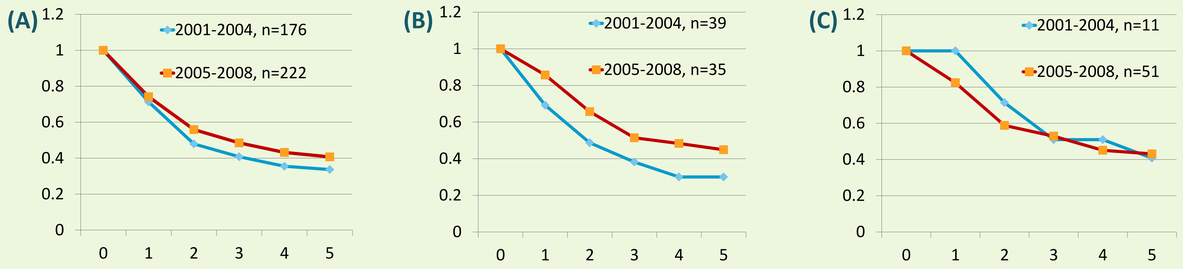

Figure 7: 5 year survival curves (A) total (B) SR (C) SRC

Conclusions

(1) The use of chemotherapy for Stage IV head and neck cancer dramatically increased starting 2004-2005, with increases in patient survival appearing in the same time frame at the national level and at MUSC[1]. Landmark studies recommending these changes were published at this time[1]. **(2)** The MUSC cohort of patients receiving trimodal therapy increased nearly 5 fold in the second time frame. When treatment planning emphasizes trimodal therapy, those patients who receive fewer modalities fare better as a group, presumably because their cohort no longer contains patients who need more aggressive therapy.
(3) The NCDB Participant User File provides sufficient data to build a meaningful picture of national trends, against which local performance can be evaluated to identify facility-specific successes.

Reference and NCDB Disclaimer

1. Lin SS, Massa ST, Varvares MA. Improved overall survival and mortality in head and neck cancer with adjuvant concurrent chemoradiotherapy in national databases. Head Neck. 2014 Sep 16. doi: 10.1002/hed.23869. [Epub ahead of print]