Optimizing Treatment in Head and Neck Cancer with Limited Resources

Friday, February 19, 2016, 7:00 am MT
Moderator: Randall Kimple, MD, University of Wisconsin

• Induction Chemotherapy Predicts Cumulative Radiation Dose and Fails to Improve Survival in Advanced Head and Neck Cancer, a National Cancer Database Analysis
  D. W. Bowles, University of Colorado Denver, Aurora, CO

• The Impact of Health Insurance Status on the Presentation, Local Management, and Outcomes of Patients with Head and Neck Cancer in the United States
  T. M. Churilla, Fox Chase Cancer Center, Philadelphia, PA

• Cost-coping Strategies and Perceived Social Isolation in Locally Advanced Head and Neck Cancer
  S. Kung, University of Chicago, Chicago, IL
Induction Chemotherapy Predicts Cumulative Radiation Dose and Fails to Improve Survival in Advanced Head and Neck Cancer, a National Cancer Database Analysis

W. Stokes¹, A. Amini¹, J. McDermott², A. Jimeno², D. Raben¹, D. W. Bowles², and S.D. Karam¹

¹Department of Radiation Oncology, University of Colorado School of Medicine, Aurora, CO, ²Division of Medical Oncology, University of Colorado School of Medicine, Aurora, CO
Background

• Induction chemotherapy (IC)
  • Intensification strategy
  • May increase overall survival (OS) in certain settings
  • Unclear if better than concurrent chemotherapy plus radiation (CRT)

• Prior randomized IC vs. CRT studies
  • Varied results
  • Underpowered
  • Included too many lower risk cancers
Method

• National Cancer Data Base (NCDB) 2003-2011

• Patients
  • Tis-T4, N2b-3 M0 squamous cell carcinomas
  • Oropharynx, larynx, hypopharynx (excluded oral cavity)
  • IC = chemotherapy 43-98 days before RT
  • CRT = chemotherapy within 7 days of RT

• OS analysis
  • Cox regression used for univariate and multivariate
  • Propensity score matching
Results

• IC vs. CRT unadjusted results
  • Younger patients (p < 0.01)
  • More oropharynx primaries (p < 0.01)
  • Higher T stage (p < 0.01)
  • Higher N stage (p < 0.01)

<table>
<thead>
<tr>
<th></th>
<th>CRT (n=6086)</th>
<th>IC (n=1907)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiation dose &lt;66 Gy</td>
<td>906 (14.9%)</td>
<td>400 (20.9%)</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Overall survival, months, median</td>
<td>64.9 (95% CI 60.1-69.7)</td>
<td>52.1 (95% CI 45.7-58.6)</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>
## Results

### Multivariate analysis for OS

<table>
<thead>
<tr>
<th></th>
<th>Hazard ratio</th>
<th>95% CI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT dose (vs. ≥66 Gy)</td>
<td>1.88</td>
<td>1.73-2.04</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>IC vs CRT, all pts</td>
<td>1.04</td>
<td>0.97-1.13</td>
<td>0.28</td>
</tr>
<tr>
<td>IC vs. CRT, T4 or N3</td>
<td>0.99</td>
<td>0.89-1.10</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Kaplan-Meier curves by propensity score matching

HR 1.07; 95% CI 0.97-1.18; p=0.18
Conclusions

• IC versus CRT
  • Administered to younger patients with higher node burdens
  • Not associated with improved OS in whole cohort
  • Not associate with improved OS in most advanced HNSCC
  • Associated with lower dose of RT

• RT to <66 Gy is associated with worse OS

• Use of IC is not supported by this analysis
The Impact of Health Insurance Status on the Presentation, Local Management, and Outcomes of Patients with Head and Neck Cancer in the United States

T. M. Churilla¹, B. Egleston¹, Y. Dong¹, M. Lango¹, and T. J. Galloway¹

¹Fox Chase Cancer Center, Philadelphia, PA.
Purpose/Methods

• To evaluate the impact of health insurance status on patients with head and neck cancer

• NCI Survival, Epidemiology, and End Results (SEER) registry study
  • ~25% of United States represented
  • Patient demographic, tumor, and treatment characteristics recorded

• 53,848 patients with head and neck cancer of the oral cavity, pharynx, or larynx

• Insurance status: Insured (80%), Medicaid (15%), or Uninsured (5%)
Cancer stage among head and neck cancer patients according to health insurance status

- **Insured**
  - Stage 1: 43%, 4 patients
  - Stage 2: 26%, 2 patients
  - Stage 3: 17%, 3 patients
  - Stage 4: 14%, 1 patient

- **Medicaid**
  - Stage 1: 14%, 1 patient
  - Stage 2: 13%, 2 patients
  - Stage 3: 17%, 3 patients
  - Stage 4: 56%, 4 patients

- **Uninsured**
  - Stage 1: 11%, 1 patient
  - Stage 2: 16%, 3 patients
  - Stage 3: 14%, 2 patients
  - Stage 4: 59%, 4 patients
Treatment trends

• Patients with Medicaid and uninsured status were less likely to undergo external beam radiation therapy
  • 23% less likely for Medicaid (p < 0.001)
  • 32% less likely for Uninsured (p < 0.001)

• Uninsured patients were 23% less likely to receive cancer directed surgery (p < 0.001)

• Adjusted for tumor site, disease stage, patient age, race, location, education, and income
Conclusions

- Important disparities among Medicaid and uninsured patients with head and neck cancer exist in the United States

- Lack of access to dental providers and primary care

- Similarity between Medicaid and uninsured cancer specific survival is concerning

- Further study is necessary to determine which patient, provider, and health care system factors contribute to these differences
Cost-coping Strategies and Perceived Social Isolation in Locally Advanced Head and Neck Cancer

S. Kung¹, J. O'Connor², B. J. Yap², and J. A. de Souza²

¹Pritzker School of Medicine, The University of Chicago; ²Section of Hematology-Oncology, Department of Medicine, The University of Chicago; Chicago, IL
Background

• 60,000 new cases of head and neck cancer each year in the U.S.

• 80% cure rate at 5 years
  • High morbidity – physical side effects
  • Costly – financial side effects

• Perceived social isolation as barrier to care
  • Social support is important in access to care in breast and colorectal cancers
Method

73 LAHNC patients

Prospective, longitudinal survey (6 months)

Demographics

Loneliness & Social Support

Medication Compliance

Financial Toxicity

Healthcare Utilization (missed appointments and hospital admissions)

Out of pocket costs

Lifestyle-altering coping strategies

Statistical analysis: Multivariate regression models using STATA
### Lifestyle-altering Coping Strategies Used within 6 Months

- **Used all or a portion of savings**: 62%
- **Borrowed money or used credit**: 42%
- **Sold possessions or property**: 25%
- **Had family members work more hours**: 23%
- **Used at least one of the above strategies**: 69%

### Average Total Out of Pocket (OOP) Costs per Month

- **Total OOP costs**: $1589.09
- **Direct medical costs** (e.g. deductible, hospital bills, PT, doctor visits): $1285.77
- **Insurance premium**: $303.32
Characteristics Independently Associated with Using More Lifestyle-altering Coping Strategies

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Odds Ratio (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private (n = 40)</td>
<td>1 (reference)</td>
<td></td>
</tr>
<tr>
<td>Medicare (n = 19)</td>
<td>0.91 (0.19-4.38)</td>
<td>0.005</td>
</tr>
<tr>
<td>Medicaid (n = 14)</td>
<td>42.3 (4.19-4.28)</td>
<td></td>
</tr>
<tr>
<td>Total OOP Costs Over 6 Months (by $1,000)</td>
<td>1.07 (1.02-1.11)</td>
<td>0.004</td>
</tr>
<tr>
<td>Wealth (by $10,000)</td>
<td>0.95 (0.91-0.98)</td>
<td>0.002</td>
</tr>
<tr>
<td>Perceived Social Isolation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low/Moderate (n = 66)</td>
<td>1 (reference)</td>
<td></td>
</tr>
<tr>
<td>High (n = 7)</td>
<td>11.5 (1.8-73.8)</td>
<td>0.010</td>
</tr>
</tbody>
</table>

Controlled for significant factors in univariate analyses (p < 0.1)
<table>
<thead>
<tr>
<th></th>
<th>Days taking less medication</th>
<th>Missed appointments</th>
<th>Inpatient hospital days</th>
</tr>
</thead>
<tbody>
<tr>
<td>All participants</td>
<td>6.99 (18.4)</td>
<td>3.40 (3.81)</td>
<td>28.1 (9.35)</td>
</tr>
<tr>
<td>Low/moderate perceived</td>
<td>5.45 (16.6)</td>
<td>3.02 (3.27)</td>
<td>27.6 (9.54)</td>
</tr>
<tr>
<td>social isolation (n = 66)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High perceived social</td>
<td>21.4 (28.5)</td>
<td>7 (6.48)</td>
<td>32.7 (5.99)</td>
</tr>
<tr>
<td>isolation (n = 7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance level for high</td>
<td>$p = 0.0278$</td>
<td>$p = 0.0077$</td>
<td>$p = 0.1712$</td>
</tr>
<tr>
<td>vs. low/moderate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Means and standard deviations calculated over the six-month study period.
Conclusions

• A majority of patients rely on lifestyle-altering cost-coping strategies to manage the financial side effects of head and neck cancer care.

• Lack of social support coupled with increased loneliness is a risk factor for sub-optimal medication adherence, missed appointments, and longer length of hospital stay.

• Assessing for factors such as financial burden, loneliness, and social support is imperative to provide optimal care for patients.
Optimizing Treatment in Head and Neck Cancer with Limited Resources

Friday, February 19, 2016, 7:00 am MT
Moderator: Randall Kimple, MD, University of Wisconsin

• Induction Chemotherapy Predicts Cumulative Radiation Dose and Fails to Improve Survival in Advanced Head and Neck Cancer, a National Cancer Database Analysis
  D. W. Bowles, University of Colorado Denver, Aurora, CO

• The Impact of Health Insurance Status on the Presentation, Local Management, and Outcomes of Patients with Head and Neck Cancer in the United States
  T. M. Churilla, Fox Chase Cancer Center, Philadelphia, PA

• Cost-coping Strategies and Perceived Social Isolation in Locally Advanced Head and Neck Cancer
  S. Kung, University of Chicago, Chicago, IL
Online attendees: Please use the chat function in Adobe Connect to submit questions.
Additional questions and interview requests:

Liz Gardner, Media Relations Manager
703-286-1600
liz.gardner@astro.org

ASTRO’s Press Office in Scottsdale
Town Hall Room, JW Marriott Camelback Resort & Spa
February 18-19, 8am-4pm MT
480-905-7935
press@astro.org

Slides, photos, and audio will be available following the briefing at www.astro.org/HNpress.