Does Age Matter? Survival Outcomes with the Addition of Concurrent Chemotherapy for Elderly Head and Neck Cancer Patients Undergoing Definitive Radiation Using the National Cancer Data Base

A. Amini\textsuperscript{1}, B. Jones\textsuperscript{1}, J. McDermott\textsuperscript{2}, A. Jimeno\textsuperscript{2}, D. W. Bowles\textsuperscript{2}, D. Raben\textsuperscript{1}, and S. D. Karam\textsuperscript{1}

\textsuperscript{1}Department of Radiation Oncology, University of Colorado Denver, Aurora, CO, \textsuperscript{2}Department of Medical Oncology, University of Colorado Denver, Aurora, CO
Background

• Chemoradiation (CRT)
  • Improves survival in locally advanced head and neck cancer
  • Decreased survival benefit with age, specifically ≥71, seen on seminal meta-analysis
  • Only 4% of patients on meta-analysis were >70 years of age
  • Under-represented elderly patient population on clinical trials

• Purpose
  • Evaluate whether the addition of chemotherapy to radiation alone confers a survival benefit in head and neck cancer patients ≥71 years
Method

• **The National Cancer Database (NCDB)**
  • 1998-2011
  • 23% >70

• **Patients**
  • ≥71 years, receiving RT +/- CT
  • Oropharynx, larynx, hypopharynx
  • Stage III and IV (T1-2, N(+) or T3-4, N0-3)
  • CRT: CT starts 14 days before or 14 days after RT

• **Overall Survival Analysis**
  • Cox regression: Univariate (UVA), multivariate (MVA)
  • Propensity score-matching (PSM)
  • Recursive partitioning analyses (RPA)
<table>
<thead>
<tr>
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<th>RT alone (n=1,504)</th>
<th>CRT (n=2,538)</th>
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<tbody>
<tr>
<td>5-year overall survival (OS)</td>
<td>15.2%</td>
<td>30.3%, HR 0.59, 95% CI 0.55-0.63, p&lt;0.001</td>
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<tr>
<td>PSM, 5-year OS</td>
<td>18.1%</td>
<td>26.4%, HR 0.73, 95% CI 0.66-0.80, p&lt;0.001</td>
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![Graph A](image1.png)  
![Graph B](image2.png)
Results

• On RPA, CRT was associated with **improved survival** in:
  • Patients ≤ 81 years old
  • Low co-morbidity (CD) score
  • Either T1-2/N2-3 or T3-4/N0-3

• On RPA, **no survival benefit** in:
  • Age > 81 years old
  • Ages 71-80 with T1-T2/ N1, CD 0-1
  • Ages 71-80 with T3-4/N1+, CD1+
Conclusions

• CRT confers longer OS over RT in subgroup of elderly patients:
  • Age ≤ 81 years
  • With T1-2, N2-3 or
  • T3-4, any N disease; and
  • Low co-morbidity scores