A population based perspective on treatment and outcome of glottic laryngeal carcinoma stage T3 and T4 – does organ preservation jeopardize survival?


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Svenskt Kvalitetsregister för Huvud- och Halscancer

Swedish Head and Neck Cancer Register (SweHNCR)
Presented at:

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• Population based epidemiologic data allow us to reveal differences in presumed homogeneous tumour entities.

• It has for long been obvious that squamous cell carcinoma of the head and neck (SCCHN) is a "mixed bag of tumours".

• However, also within the major tumour sites [oral cavity, oropharynx and larynx] there are differences of biological and clinical importance.
Background 2:

The treatment concept "Larynx preservation" was introduced in the 1990:es.

Recent years there has been a debate concerning organ preservation therapy and the possible risk of a less favourable outcome in the long run for patients with advanced laryngeal carcinoma.
Materials:

- *The Swedish Head and Neck Cancer Quality Register (SweHNCR)* was established in 2008 and cover >97% of incident cases.
- Our presentation is based on data covering the period 2008-13.
- During this period a total of 6,430 new cases were registered.
- Of these 1,037 were laryngeal squamous cell carcinomas.
• Sweden has:
  - A population of 9.6 million people.
  - Six healthcare regions with a catch-area of 0.8 – 1.8 people each.
  - Seven University Hospitals.
• H&N Cancer patients are only treated at the University Hospitals ENT and Oncology departments.
• Treatments are decided in weekly MDT conferences.
## Cancer of the Larynx 2008 – 2013
*(SweHNCR)*

<table>
<thead>
<tr>
<th>ICD-10</th>
<th>Glottis</th>
<th>Supragl</th>
<th>NOS</th>
<th>-</th>
<th>Total</th>
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<tr>
<td>Epigl, anterior surface</td>
<td>C10.1</td>
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<td>14</td>
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<tr>
<td>Glottic</td>
<td>C32.0</td>
<td>691</td>
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<tr>
<td>Supraglottic</td>
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<tr>
<td>Subglottic</td>
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<td>Laryngeal cartilage</td>
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<td>Overlapping sites</td>
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<tr>
<td>NOS</td>
<td>C32.9</td>
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<tr>
<td>Total</td>
<td></td>
<td>691</td>
<td>264</td>
<td>51</td>
<td>1.037</td>
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</table>
Distribution in relation to localization

- Glottic: 67%
- Supraglottic: 25%
- Subglottic: 3%
- NOS: 5%
Larynx - Male/female ratios vs. site

[p: < 0.001]
Distribution of T-stage at diagnosis (curative cases)
Distribution of T- and N-stage
Glottic and supraglottic cancers are epidemiological not identical
National treatment guidelines for glottic laryngeal cancer in Sweden

**T1**  Radiotherapy or endoscopic CO$_2$-laser surgery (patient/doctor preference)

**T2**  Radiotherapy or - if feasible - CO$_2$-laser surgery (patient/doctor preference)

**T3**  RT +/- CHX and salvage laryngectomy

**T4**  Laryngectomy (if resectable), otherwise RT +/- CHX
Outcome:

Observed survival for glottic cancer, treated with curative intention

SweHNCR 2008-2013
Relative survival for glottic cancer, treated with curative intention

SweHNCR 2008-2013

Cumulative probability

Year after diagnosis

Age-standardized according to International Cancer Survival Standard 3

T1 (n=360)
T2 (n=167)
T3 (n=79)
T4 (n=59)
What’s wrong?

A/ The TNM-system?

The Principles of the TNM System

The practice of dividing cancer cases into groups according to so-called stages arose from the fact that survival rates were higher for cases in which the disease was localized than for those in which the disease had extended beyond the organ of origin.

[UICC, Seventh Edition, 2009]
B/ Treatment concepts?

![Bar chart showing proportion of laryngectomy for T3 and T4 stages.]

- **T3:**
  - Laryngectomy: 14.3%
  - No: 85.7%

- **T4:**
  - Laryngectomy: 81.4%
  - No: 18.6%
Conclusion

- The TNM-classification is designed to stratify stage as a major determinant of prognosis. Thus patients with a glottic T3 cancer should have a more favorable outcome than T4.

- Our findings in a population based cohort, where the majority of patients with T3 tumours, in contrast to patients with T4 tumours, were treated with an organ sparing intention, do not support the expected outcome.

- This raise concerns on the principles of management of advanced glottic laryngeal cancer.
Remains to study:

• Patterns of relapse
• Salvage procedures
Thank you for your attention

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