

Supplementary Materials

Table S1. Late toxicities and dose to OARs

| Parameter | | | At risk | Toxicity occurred | HR | 95% CI | p-value |
|----------------------|----------------------------|--------------------|---------|-------------------|------------|------------|---------|
| Xerostomia | Parotids D _{mean} | <26 Gy (Reference) | 36 | 10 | | | |
| | | ≥26 years | 36 | 24 | 5.19 | 1.90–14.22 | 0.001 |
| | SMGs D _{mean} | <35 Gy (Reference) | 24 | 8 | | | |
| | | ≥35 Gy | 48 | 26 | 2.36 | 0.85–6.56 | 0.099 |
| Dysphagia | PC D _{mean} | <45 Gy (Reference) | 24 | 3 | | | |
| | | ≥45 Gy | 48 | 24 | 7.0 | 1.84–26.61 | 0.004 |
| | | <50 Gy (Reference) | 34 | 6 | | | |
| | | ≥50 Gy | 38 | 21 | 5.76 | 1.93–17.13 | 0.002 |
| | | <55 Gy (Reference) | 48 | 12 | | | |
| | | ≥55 Gy | 24 | 15 | 4.99 | 1.74–14.33 | 0.003 |
| | Larynx D _{mean} | <45 Gy (Reference) | 30 | 8 | | | |
| | | ≥45 Gy | 42 | 19 | 2.27 | 0.82–6.24 | 0.112 |
| | | <50 Gy (Reference) | 40 | 12 | | | |
| | | ≥50 Gy | 32 | 15 | 2.05 | 0.78–5.42 | 0.144 |
| | | <55 Gy (Reference) | 49 | 14 | | | |
| | | ≥55 Gy | 23 | 13 | 3.25 | 1.15–9.11 | 0.025 |
| | CE D _{mean} | <45 Gy (Reference) | 47 | 14 | | | |
| | | ≥45 Gy | 25 | 13 | 2.55 | 0.93–6.96 | 0.067 |
| | | <50 Gy (Reference) | 60 | 20 | | | |
| ≥50 Gy | | 12 | 7 | 2.80 | 0.78–9.94 | 0.111 | |
| <55 Gy (Reference) | | 67 | 23 | | | | |
| ≥55 Gy | | 5 | 4 | 7.65 | 0.80–72.49 | 0.076 | |
| Treatment type | Radical (Reference) | 40 | | | | | |
| | Adjuvant (post-operative) | 32 | 19 | 5.26 | 1.85–14.87 | 0.002 | |
| Site | Pharynx | 39 | 8 | | | | |
| | Others | 33 | 19 | 5.85 | 2.05–16.67 | 0.001 | |
| Acute dysphagia | Grade ≤2 | 37 | 16 | | | | |
| | Grade ≥3 | 35 | 11 | 1.66 | 0.63–4.36 | 0.302 | |
| Aspiration | PC D _{mean} | <45 Gy (Reference) | 24 | 5 | | | |
| | | ≥45 Gy | 48 | 20 | 2.71 | 0.86–8.48 | 0.086 |
| | | <50 Gy (Reference) | 34 | 9 | | | |
| | | ≥50 Gy | 38 | 16 | 2.02 | 0.74–5.47 | 0.167 |
| | | <55 Gy (Reference) | 48 | 12 | | | |
| | | ≥55 Gy | 24 | 13 | 3.54 | 1.25–9.98 | 0.017 |
| | Larynx D _{mean} | <45 Gy (Reference) | 30 | 4 | | | |
| | | ≥45 Gy | 42 | 21 | 6.5 | 1.93–21.88 | 0.003 |
| | | <50 Gy (Reference) | 40 | 10 | | | |
| | | ≥50 Gy | 32 | 15 | 2.64 | 0.97–7.17 | 0.056 |
| | | <55 Gy (Reference) | 49 | 11 | | | |
| | | ≥55 Gy | 23 | 14 | 5.37 | 1.83–15.71 | 0.002 |
| CE D _{mean} | <45 Gy (Reference) | 47 | 14 | | | | |
| | ≥45 Gy | 25 | 11 | 1.85 | 0.67–5.07 | 0.230 | |

| | | | | | | |
|------------------|---------------------------|----|----|------|------------|-------|
| | <50 Gy (Reference) | 60 | 21 | | | |
| | ≥50 Gy | 12 | 4 | 0.92 | 0.24–3.44 | 0.912 |
| | <55 Gy (Reference) | 67 | 22 | | | |
| | ≥55 Gy | 5 | 3 | 3.06 | 0.47–19.71 | 0.238 |
| Late dysphagia | <No dysphagia (Reference) | 45 | 10 | | | |
| | ≥With dysphagia | 27 | 15 | 4.37 | 1.55–12.31 | 0.005 |
| Treatment type | Radical (Reference) | 40 | 5 | | | |
| | Adjuvant (post-operative) | 32 | 10 | 2.65 | 0.97–7.17 | 0.056 |
| Site | Pharynx | 39 | 8 | | | |
| | Others | 33 | 17 | 4.12 | 1.46–11.58 | 0.007 |
| Acute aspiration | Absent | 13 | 13 | | | |
| | Present | 21 | 21 | 0.63 | 0.23–1.66 | 0.348 |

Logistic regression was used to correlate D_{mean} received by salivary glands and dysphagia aspiration-related structure with risk of developing xerostomia and dysphagia, respectively.

OAR, organ-at-risk; HR, hazard ratio; CI, confidence interval; SMGs, submandibular glands; PC, pharyngeal constrictor; CE, cervical esophagus.