Table B-2. Comparative study design and patient characteristics

| Study (year) | Study design  (USPSTF rating) | RT modalities (n) | Treatment setting | Tumor setting | Age | Sex | AJCC stage | T classification | N classification |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Gupta  (2012)1 | RCT  (fair) | 3DCRT (28)  IMRT (32) | CCRT | Hypopharynx  3DCRT: 29%  IMRT: 28%  Larynx  3DCRT: 18%  IMRT: 19%  Oropharynx  3DCRT: 53%  IMRT: 53% | 3DCRT  Median 55 years  (range 33-65 years)  IMRT  Median 51 years  (range 31-65 years) | 3DCRT  89% Male  11% Female  IMRT  91% Male  9% Female | 3DCRT  18% I-II  50% III  32% IV  IMRT  22% I-II  50% III  28% IV | 3DCRT  43% T1-T2  57% T3  IMRT  44% T1-T2  56% T3 | 3DCRT  68% N0-N1  32% N2a-b  IMRT  66% N0-N1  34% N2a-b |
| Rathod (2013)2 | RCT  (fair) | 3DCRT (28)  IMRT (32) | CCRT | Hypopharynx  3DCRT: 29%  IMRT: 28%  Larynx  3DCRT: 18%  IMRT: 19%  Oropharynx  3DCRT: 53%  IMRT: 53% | 3DCRT  Median 55 years  (range 33-65 years)  IMRT  Median 51 years  (range 31-65 years) | 3DCRT  89% Male  11% Female  IMRT  91% Male  9% Female | 3DCRT  18% I-II  50% III  32% IV  IMRT  22% I-II  50% III  28% IV | 3DRT  43% T1-T2  57% T3  IMRT  44% T1-T2  56% T3 | 3DCRT  68% N0-N1  32% N2a-b  IMRT  66% N0-N1  34% N2a-b |
| Al-Mamgani  (2013)3 | Comparative  Retrospective  (poor) | 3DCRT (65)  IMRT (139) | CCRT | Oropharynx  100% | Median 54 yearsa  (range 40-84 years) | 69% Malea  31% Female | 34% IIIa  59% IVA  7% IVB | 62% T3a  33% T4a  5% T4b | 34% N0a  14% N1  4% N2a  31% N2b  12% N2c  5% N3 |

| Table B-2. Comparative study design and patient characteristics (continued) | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study (year) | Study design  (USPSTF rating) | RT modalities (n) | Treatment setting | Tumor setting | Age | Sex | AJCC stage | T classification | N classification |
| Lambrecht  (2013)4 | Comparative  Retrospective  (poor) | 3DCRT (135)  IMRT (110) | CCRT | Hypopharynx  3DCRT: 16%  IMRT: 3%  Larynx  3DCRT: 21%  IMRT: 25%  Nasopharynx  3DCRT: 2%  IMRT: 4%  Oral cavity  3DCRT: 4%  IMRT: 4%  Oropharynx  3DCRT: 56%  IMRT: 40% | 3DCRT  Mean 57 years  Median 56 years  (SD 9 years)  IMRT  Mean 61 years  Median 60 years  (SD 9 years) | 3DCRT  86% Male  14% Female  IMRT  85% Male  15% Female | 3DCRT  24% III  76% IV  IMRT  18% III  82% IV | 3DCRT  7% T1  21% T2  33% T3  39% T4  IMRT  5% T1  17% T2  36% T3  42% T4 | 3DCRT  14% N0  24% N1  4% N2a  30% N2b  26% N2c  2% N3  IMRT  14% N0  10% N1  3% N2a  30% N2b  38% N2c  5% N3 |
| Al-Mamgani  (2012)5 | Comparative Retrospective  (poor) | 3DCRT (62)  IMRT (114) | RT ± CCT | Hypopharynx  100% | Median 60 yearsa  (range 36-87 years) | 79% Malea  21% Female | Not reported | 10% T1a  31% T2  32% T3  20% T4a  7% T4b | 24 % N0a  17% N1  4% N2a  30% N2b  15% N2c  10% N3 |
| Chen (2012)6 | Comparative Retrospective  (poor) | 3DCRT (71)  IMRT (84) | RT ± CCT | Hypopharynx  3DCRT: 12%  IMRT: 13%  Larynx  3DCRT: 12%  IMRT: 13%  Nasopharynx  3DCRT: 7%  IMRT: 10%  Oropharynx  3DCRT: 41%  IMRT: 38%  Unknown primary  3DCRT: 10%  IMRT: 12% | Median 56 years  (range 21-93 years)  3DCRT  51% < 56 years  49% > 56 years  IMRT  45% < 56 years  55% > 56 years | 59% Malea  41% Female | Not reported | 3DCRT  10% T0  17% T1  20% T2  25% T3  28% T4  IMRT  12% T0  18% T1  19% T2  23% T3  29% T4 | Not reported |
| Al-Mamgani  (2012)7 | Comparative Retrospective  (poor) | 3DCRT (25)  IMRT (57) | CCRT ± surgery | Paranasal sinus  100% | Median 62 yearsa  (range 28-86 years) | 67% Malea  33% Female | Not reported | 9% T2a  27% T3  37% T4a  27% T4b | 87 % N0a  13% N+ |
| Kruser (2013)8 | Comparative Prospective (poor) | 3DCRT (41)  IMRT (137) | CCRT ± surgery | Hypopharynx Larynx Nasopharynx  Oral cavity  Oropharynx  Unknown primary | 3DCRT  Median 54 years (range 39-78 years)  IMRT  LINAC-IMRT: Median 53 years (range 36-77 years)  Tomotherapy:  Median 57 years (39-77 years) | 3DCRT  75.6% Male  24.4% Female  IMRT  78.8% Male  22.2% Female | 11.8% IIIc  88.2% IVa-b | 6.7% T0c  16.3% T1  32.6% T2  25.3% T3  19.1% T4 | Not reported |
| Dirix (2010)9 | Comparative Prospective IMRT  Retrospective 3DCRT  (poor) | 3DCRT (41)  IMRT (40) | Postoperative RT | Nasal cavity  3DCRT: 5%  IMRT: 15%  Paranasal sinus  3DCRT: 95%  IMRT: 85% | 3DCRT  Median 61 years  (range 37-85 years)  IMRT  Median 63 years  (range 37-84 years) | 3DCRT  82.9% Male  17.1% Female  IMRT  85.0% Male  15.0% Female | Not reported | 3DCRT  24.4% T2  56.1% T3  12.2% T4a  7.3% T4b  IMRT  22.5% T2  47.5% T3  17.5% T4a  12.5% T4b | 3DCRT  100.0% N0  IMRT  Not reported |
| Guan (2013)10 | Comparative  Retrospective  (poor) | 3DCRT (16)  IMRT (43) | RT ± CCT ± surgery | Nasal cavity  68%  Paranasal sinus  32% | Median 56 yearsa  (range 19-83 years)  63.7% ≤ 60 years  37.3% > 60 years | 69.5% Malea  30.5% Female | 5.1% Ia  6.8% II  16.9% III  45.8% IVa  28.8% IVb | 6.8% T1a  10.2% T2  18.6% T3  40.7% T4a  23.7% T4b | 69.4% N0a  15.3% N1  11.9% N2  3.4% N3 |
| Kong (2013)11 | Comparative Retrospective  (poor) | 3DCRT (30)  IMRT (37) | RT ± CCT ± surgery | Hypopharynx  3DCRT: 16.2%  IMRT: 3.3%  Larynx  3DCRT: 13.5%  IMRT: 13.3%  Nasopharynx  3DCRT: 8.1%  IMRT: 33.3%  Oral Cavity  3DCRT: 40.5%  IMRT: 33.3%  Oropharynx  3DCRT: 13.5%  IMRT: 13.3%  Paranasal sinus  3DCRT: 8.1%  IMRT: 3.3% | 3DCRT  Median 63 years  (range 20-84 years)  IMRT  Median 56 years  (range 29-84 years) | 3DCRT  70.3% Male  29.7% Female  IMRT  73.3% Male  26.7% Female | 3DCRT  35.1% ≤ III  64.9% ≥ IVA  IMRT  60.0% ≤ III  40.0% ≥ IVA | 3DCRT  8.2% T1  35.1% T2  29.7% T3  27.0% T4  IMRT  20.0% T1  56.7% T2  10.0% T3  13.3% T4 | 3DCRT  40.5% N0  8.1% N1  48.6% N2  2.8% N3  IMRT  30.0% N0  23.3% N1  46.7% N2  0.0% N3 |
| Huang  (2013)12 | Comparative  Retrospective  (poor) | 3DCRT (53)  IMRT (30) | RT ± CCT | Nasopharynx  100% | 3DCRT  Mean 52.3 ± 13.9 years  (range 18-78 years)  IMRT  Mean 48.2 ± 14.0 years  (range 19-78 years) | 3DCRT  83% Male  17% Female  IMRT  83.3% Male  16.7% Female | Not reported | All included patients were enrolled with Nonmetastatic T4 lesions | 3DCRT  22.6% N0  32.1% N1  43.4% N2  1.9% N3  IMRT  10.0% N0  23.3% N1  63.3% N2  3.3% N3 |
| Lohia (2014)13 | Comparative Retrospective (poor) | 3DCRT (56)  IMRT (103) | RT ± CCT | Oropharynx  100% | 3DCRT  Median 58.5 years  (range 33-78 years)  IMRT  Median 58.5 years  (range 37-82 years) | 3DCRT  80.4% Male  19.6% Female  IMRT  85.4% Male  14.6% Female | 3DCRT  0% I  5% II  30% III  21% IV  IMRT  0% I  11% II  65% III  27% IV | 3DCRT  8.9% T1  35.7% T2  19.6% T3  28.6% T4a  7.1% T4b  IMRT  10.7% T1  47.6% T2  21.4% T3  12.6% T4a  7.8% T4b | 3DCRT  7.1% N0  19.6% N1  17.9% N2a  21.4% N2b  32.1% N2c  1.8% N3  IMRT  9.7% N0  9.7% N1  9.7% N2a  37.9% N2b  27.2% N2c  5.8% N3 |
| Mok  (2014)14 | Comparative  Retrospective  (poor) | 3DCRT (90)  IMRT (91) | RT ± CCT | Hypopharynx  100% | 3DCRT  Median 62 years  (range 43-84 years)  IMRT  Median 67 years  (range 35-85 years) | 3DCRT  84.0% Male  16.0% Female  IMRT  81.0% Male  19.0% Female | Not reported | 3DCRT  46% T1-T2  54% T3-T4  IMRT  38% T1-T2  62% T3-T4 | 3DCRT  58% N0-N2a  42% N2b-N3  IMRT  37% N0-N2a  63% N2b-N3 |
| Ozyigit  (2011)15 | Comparative Retrospective  (poor) | 3DCRT (27)  SBRT (24) | rRT ± CCT | Nasopharynx  100% | Median 46 years  (range 13-70 years)  3DCRTb  52% < 46 years  48% ≥ 46 years  SBRT  42% < 46 years  58% ≥ 46 years | 3DCRTb  78% Male  22% Female  SBRT  63% Male  37% Female | 3DCRTb  7% I (11% rI)  30% II (11% rII)  30% III (37% rIII)  33% IV (41% rIV)  SBRT  8% I (21% rI)  17% II (8% rII)  46% III (25% rIII)  29% IV (46% rIV) | 3DCRTb  30% TI (15% rT2)  18% T2 (7% rT2)  26% T3 (37% rT3)  26% T4 (41% rT4)  SBRT  29% TI (21% rT1)  17% T2 (8% rT2)  29% T3 (25% rT3)  25% T4 (46% rT4) | Not reported |

**Abbreviations:** AJCC = American Joint Commission on Cancer; CCT = concurrent chemotherapy; CCRT = concurrent chemoradiotherapy; IMRT = intensity-modulated radiotherapy; RCT = randomized clinical trial; RT = radiotherapy; SBRT = stereotactic body radiotherapy; 3DCRT = three-dimensional conformal radiotherapy; USPSTF = United States Preventive Services Task Force.  
aNo breakdown of the characteristic between treatment arms was provided.  
bSix (22.2%) of patients in the 3DCRT treatment arm also received high-dose rate brachytherapy. As reported, these data do not reflect a discrimination between positive brachytherapy and negative brachytherapy subjects.

cNo breakdown of the characteristic between RT regimen was provided, however, it was reported that there was no significant difference between treatment arms.