HEAD AND NECK CANCER TREATMENT REGIMENS (Part 1 of 5)

Clinical Trials: The NCCN recommends cancer patient participation in clinical trials as the gold standard for treatment.

Cancer therapy selection, dosing, administration, and the management of related adverse events can be a complex process that should be handled by an experienced healthcare team. Clinicians must choose and verify treatment options based on the individual patient; drug dose modifications and supportive care interventions should be administered accordingly. The cancer treatment regimens below may include both U.S. Food and Drug Administration-approved and unapproved indications/regimens. These regimens are only provided to supplement the latest treatment strategies.

These Guidelines are a work in progress that may be refined as often as new significant data becomes available. The NCCN Guidelines® are a consensus statement of its authors regarding their views of currently accepted approaches to treatment. Any clinician seeking to apply or consult any NCCN Guidelines® is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient's care or treatment. The National Comprehensive Cancer Network makes no warranties of any kind whatsoever regarding their content, use, or application and disclaims any responsibility for their application or use in any way.

Sauamoue Call Cancare*

Squamous Cell Cancers*		
Primary Systemic Therapy + Concurrent Radiotherapy ¹		
REGIMEN	DOSING	
Cisplatin (preferred) ^{2,3}	$\label{eq:day_day} \textbf{Days 1, 22 and 43:} \ \ \text{Cisplatin } 100 \text{mg/m}^2 \ \text{IV} + \text{concurrent radiotherapy } 2 \text{Gy/day} \\ \text{to a total of } 70 \text{Gy.}$	
Cetuximab ⁴	Day 1: Cetuximab 400mg/m² loading dose over 2 hours, 1 week before radiotherapy, <u>plus</u> Day 7: Begin radiotherapy with 7 weekly infusions of cetuximab 250mg/m².	
Carboplatin + infusional 5-FU ^{5,6}	Days 1-4: 5-FU 600mg/m²/day as continuous IV infusion + carboplatin 70mg/m²/day IV bolus. Repeat every 3 weeks for 3 cycles (given concurrently with radiotherapy).	
5-FU + hydroxyurea ⁷	Day 1: Hydroxyurea 1,000mg PO every 12 hours (11 doses/cycle) and 5-FU 400mg/m²/day continuous IV infusion, <u>plus</u> radiotherapy: 70Gy, delivered in 35 fractions; 1 fraction delivered daily Monday–Friday. Concurrent radiotherapy and chemotherapy every other week for total treatment duration of 13 weeks.	
Cisplatin + paclitaxel ⁷	Day 1: Paclitaxel 30mg/m² IV (begin on Monday), plus Day 2: Cisplatin 20mg/m² IV (every Tuesday). Repeat cycle every week for 7 cycles, <u>plus</u> radiotherapy: 70Gy, delivered in 35 fractions; 1 fraction delivered daily Monday–Friday.	
Cisplatin + infusional 5-FU ⁸	Day 1: Cisplatin 60mg/m² over 15 minutes; <u>plus</u> Days 1–5: 5-FU 800mg/m² by continuous infusion; <u>plus</u> Days 1–5: Radiotherapy: 2Gy repeated every other week for 7 cycles.	
Carboplatin/paclitaxel ⁹	Day 1: Paclitaxel 40-45mg/m²/week and carboplatin 100mg/m²/week; prior to radiotherapy: 70.2Gy at 1.8Gy/fraction/day for 5 days/week.	
Weekly cisplatin ^{10,11}	Day 1–28: Cisplatin 40mg/mg² IV over 30 minutes weekly; <u>plus</u> Days 1–38: Radiotherapy (5 fractions/week): 1.8Gy single dose (up to total dose of 50.4Gy); <u>plus</u> Days 22–38: Boost radiotherapy: 1.5Gy/day (up to 19.5Gy) in addition to regular dose. Booster doses to be given at least 6-hours after regular dose (total tumor dose of 69.9Gy.) OR Day 1–28: Cisplatin 40mg/mg² IV weekly; <u>plus</u> Days 1–40: Radiotherapy: five fractions of 1.8Gy/week (up to total dose of 54Gy); <u>plus</u> Days 25–40: Boost radiotherapy: 1.5Gy/day (up to 19.5Gy) in addition to regular dose. Booster doses to be given at least 6-hours after regular dose.	
Primary Chemotherapy With Postoperative Chemoradiation ¹		
Cisplatin ¹²⁻¹⁵	Days 1, 22 and 43: Cisplatin 100mg/m ² IV + radiotherapy.	
Induction Chemotherapy [†] /Sequential chemotherapy ^{1‡}		
Docetaxel + cisplatin + 5-FU ¹⁶⁻¹⁸	Day 1: Docetaxel 75mg/m² IV + cisplatin 75mg/m² IV, <u>plus</u> Days 1–5: 5-FU 750mg/m² continuous IV infusion. Repeat every 3 weeks for 4 cycles.	
Paclitaxel + cisplatin+ infusional 5-FU ¹⁹	Day 1: Paclitaxel 175mg/m² over 3 hours Day 2: Cisplatin 100mg/m²; plus Day 2-6: 5-FU 500mg/m² continuous infusion Repeat every 3 weeks for 3 cycles.§	
	continued	

HEAD AND NECK CANCER TREATMENT REGIMENS (Part 2 of 5)

Nasopharynx Cancer		
Chemoradiation Followed by Adjuvant Chemotherapy ¹		
REGIMEN	DOSING	
Cisplatin + radiotherapy + cisplatin + 5-FU ²⁰⁻²²	Cycles 1-3 Day 1: Cisplatin 100mg/m² IV; plus radiotherapy. Repeat cycle every 3 weeks; followed by Cycles 4-6 Days 1-4: Cisplatin 80mg/m²/day + 5-FU 1,000mg/m²/day IV over 96 hours. Repeat cycle every 4 weeks for 3 cycles.	
Carboplatin + radiotherapy + carboplatin + 5-FU ²³	Cycles 1-3 Day 1: Carboplatin AUC 6 IV; plus radiotherapy: 200cGy/fraction w/ five daily fractions/week (to a total dose of 6600-7000cGy). Repeat every 3 weeks for 3 cycles; followed by Cycles 4-6 Days 1-4: Carboplatin AUC 5 IV + 5-FU 1,000mg/m²/day IV over 96 hours. Repeat cycle every 3 weeks.	
Induction Chemotherapy [†] /Sequential Chemotherapy ¹		
Docetaxel + cisplatin + 5-FU ²⁴	Day 1: Docetaxel 70mg/m² IV over 1 hour and cisplatin 75mg/m² IV over 3 hours; followed by Days 1-4: 5-FU 1,000mg/m² IV over 96 hours. Repeat every week for 3 cycles; followed by Cisplatin 100mg/m²; plus radiotherapy: 5 daily fractions of 1.8 or 2Gy/day (total dose of 68.4Gy) Repeat every 3 weeks.	
Cisplatin + 5-FU ^{17,25}	Day 1: Cisplatin 100mg/m²/day IV. Days 1-4: 5-FU 1,000mg/m²/day continuous IV infusion. Repeat cycle every 3 weeks for a minimum of 6 cycles.	
Cisplatin + epirubicin +	This regimen was included in the NCCN guidelines but no reference was provided	
paclitaxel	to indicate appropriate dosage.	
Principles of Systemic Therapy ¹ • The choice of chemotherapy should be individualized based on patient characteristics (performance status, goals of therapy).		
•Unless otherwise specified, regime	ens listed below can be used for either nasopharyngeal or non-nasopharyngeal cancer.	
Combination Therapy for Rec	current, Unresectable, or Metastatic Disease (incurable)¹	
Cisplatin or carboplatin + 5-FU + cetuximab ²⁶ (non-nasopharyngeal)	Day 1: Cisplatin 100mg/m² IV or carboplatin AUC=5mg/mL/min 1 hour IV infusion, plus Day 1: Cetuximab 400mg/m² IV over 2 hours (initial dose), followed by 250mg/m² IV over 1 hour once weekly. Days 1-4: 5-FU 1,000mg/m²/day. Repeat cycle every 3 weeks for a maximum of 6 cycles.	
Carboplatin + docetaxel ²⁷	Day 1: Docetaxel 65mg/m² IV over 1 hour; followed immediately by carboplatin AUC=6 IV. Repeat cycle every 3 weeks.	
Cisplatin + paclitaxel ²⁵	Day 1: Cisplatin 75mg/m²/day IV + paclitaxel 175mg/m² IV over 3 hours. Repeat cycle every 3 weeks for a minimum of 6 cycles.	
Cisplatin + cetuximab ²⁸ (for non-nasopharyngeal disease)	Day 1: Cetuximab 400mg/m² IV for one cycle, then cetuximab 250mg/m² IV for subsequent cycles. Repeat once weekly, <u>plus</u> Day 1: Cisplatin 100mg/m² IV. Repeat every 4 weeks	
Cisplatin + 5-FU ^{25,29}	Day 1: Cisplatin 100mg/m²/day IV. Days 1-4: 5-FU 1,000mg/m²/day continuous IV infusion. Repeat cycle every 3 weeks for a minimum of 6 cycles.	
Carboplatin + cetuximab ³⁰	Day 1: Cetuximab initial dose of 400mg/m² IV over 2 hours; followed by weekly doses of cetuximab 250mg/m² IV over 1 hour; followed by carboplatin AUC=5 IV. Repeat every 3 weeks for a maximum of 8 cycles.	
	continued	

HEAD AND NECK CANCER TREATMENT REGIMENS (Part 3 of 5)

Nasopharynx Cancer (continued)

Combination Therapy for Recurrent, Unresectable, or Metastatic Disease (incurable) ¹ (continued)		
REGIMEN	DOSING	
Gemcitabine + vinorelbine ³¹	Day 1 and 8: Vinorelbine 25mg/m² IV; followed by gemcitabine 1,000mg/m² IV over 30 minutes. Repeat every 3 weeks.	
Single Agents for Recurrent, Unresectable, or Metastatic Disease (incurable) ¹		
Cisplatin ^{28,32}	Day 1: Cisplatin 100mg/m² IV over 15–20 minutes. Repeat every 3–4 weeks.	
Carboplatin ³³	Day 1: 25mg/m² daily followed by radiotherapy: 5 daily fractions of 1.8 or 2Gy.	
Paclitaxel ³⁴	Day 1: Paclitaxel 80mg/m² IV over 1 hour. Repeat every 6 weeks.	
Docetaxel ^{35,36}	Day 1: Docetaxel 40–100mg/m² IV over 1 hour. Repeat every 3 weeks.	
5-FU ³²	Days 1–4: 5-FU 1,000mg/m² IV over 24 hours. Repeat every 3 weeks.	
Methotrexate ^{29,37}	Day 1: Methotrexate 40mg/m² IV weekly.	
Cetuximab ³⁸ (non-nasopharyngeal)	Day 1: Cetuximab 400mg/m² over 2 hours as a loading dose (including a 20mg test dose); followed by cetuximab 250mg/m² IV over 1 hour weekly. Repeat at least every 6 weeks.	
Ifosfamide ³⁹	Days 1–3: Ifosfamide 3g/m² IV daily; <u>plus</u> mesna 600mg/m² PO daily. Repeat every 3 weeks.	
Bleomycin ^{40,41}	Days 1-21: Bleomycin 10mg IV bolus twice weekly on Tuesday and Thursday (60mg/six fractions); followed by radiotherapy: 25Gy split into two courses, with each course given in 10 fractions over 2 weeks, with a 2 week split (total dose of 50Gy/20 fractions). OR Days 1-35: Bleomycin 15mg IM twice a week (total dose 150mg); followed by	
	radiotherapy: 70Gy	
Gemcitabine ⁴² (nasopharyngeal)	Days 1, 8, 15: Gemcitabine 1,000mg/m² IV over 30 minutes. Repeat every 4 weeks.	
Capecitabine ⁴³	Days 1-14: Capecitabine 1,250mg/m² PO; <u>followed by</u> a 1-week rest period. Repeat every 3 weeks for at least two cycles.	
Vinorelbine ^{44,45} (non-nasopharyngeal)	Day 1: Vinorelbine 30mg/m²/week IV (over a short duration, on an out-patient basis)	

- Includes lip, oral cavity, oropharynx, hypopharynx, glottic larynx, supraglottic larynx, ethmoid sinus, maxillary sinus, occult primary.
 Induction chemotherapy should only be done in a tertiary setting.
- ‡ Following induction, agents to be used with concurrent chemoradiation typically include weekly carboplatin or cetuximab. 46-48
- § Patients with complete partial response of greater than 80% in primary tumor received additional chemoradiation therapy (i.e., cisplatin 100mg/m² on days 1, 22, and 43 plus 70Gy). Radiotherapy was administered in 35 fractions of 2Gy each over a 7-week period.
- Following induction, agents to be used with concurrent chemoradiation typically include weekly cisplatin²¹ or carboplatin.⁴⁶

References

- Referenced with permission from NCCN Clinical Practice Guidelines in Oncology[™]. Bladder Cancer. v 1.2014. Available at: http://www.nccn.org/professionals/physician_gls/pdf/ head-and-neck.pdf. Accessed April 10, 2014.
- Adelstein DJ, Li Y, Adams GL, et al. An intergroup phase III comparison of standard radiation therapy and two schedules of concurrent chemoradiotherapy in patients with unresectable squamous cell head and neck cancer. J Clin Oncol. 2003; 21(1):92–98.
- Forastiere AA, Zhang Q, Weber RS, et al. Long-term results of RTOG 91–11: a comparison of three nonsurgical treatment strategies to preserve the larynx in patients with locally advanced larynx cancer. J Clin Oncol. 2013;31:845–852.
- Bonner JA, Harari PM, Giralt J, et al. Radiotherapy plus cetuximab for locoregionally advanced head and neck cancer: 5-year survival data from a phase 3 randomized trial, and relation between cetuximab-induced rash and survival. *Lancet Oncol*. 2010;11:21–28.

continued

HEAD AND NECK CANCER TREATMENT REGIMENS (Part 4 of 5)

References (continued)

- Denis F, Garaud P, Bardet E, et al. Final results of the 94-01 French Head and Neck Oncology and Radiotherapy Group randomized trial comparing radiotherapy alone with concomitant radiochemotherapy in advanced-stage oropharynx carcinoma. J Clin Oncol. 2004:22:69-76.
- Bourhis J, Sire C, Graff P, et al. Concomitant chemoradiotherapy versus acceleration of radiotherapy with or without concomitant chemotherapy in locally advanced head and neck carcinoma (GORTEC 99-02): an open-label phase 3 randomised trial. Lancet Oncol. 2012;13:145-153.
- Garden AS, Harris J, Vokes EE, et al. Preliminary results of Radiation Therapy Oncology Group 97-03: A randomized phase II trial of concurrent radiation and chemotherapy for advanced squamous cell carcinomas of the head and neck. J Clin Oncol. 2004;22(14):2856-2864.
- Taylor 5, Murthy A, Vannetzel J, et al. Randomized comparison of neoadjuvant cisplatin and fluorouracil infusion followed by radiation versus concomitant treatment in advanced head and neck cancer. *J Clin Oncol.* 1994:12:385-395.
- Suntharalingam M, Haas ML, Conley BA, et al. The use of carboplatin and paclitaxel with daily radiotherapy in patients with locally advanced squamous cell carcinomas of the head and neck. Int J Radiat Oncol Biol Phys. 2000;47:49–56.
- Beckmann GK, Hoppe F, Pfreundner L, et al. Hyperfractionated accelerated radiotherapy in combination with weekly cisplatin for locally advanced head and neck cancer. Head Neck. 2005:27:36-43.
- Medina JA, Rueda A, de Pasos AS, et al. A phase II study of concomitant boost radiation plus concurrent weekly cisplatin for locally advanced unresectable head and neck carcinomas. Radiother Oncol. 2006;79:34–38.
- Cooper JS, Pajak TF, Forastiere AA, et al. Postoperative concurrent radiotherapy and chemotherapy for high-risk squamous-cell carcinoma of the head and neck. N Engl J Med. 2004; 350:1937-1944.
- Bernier J, Domenge C, Ozsahin M, et al. Postoperative irradiation with or without concomitant chemotherapy for locally advanced head and neck cancer. N Engl J Med. 2004;350: 1945-1952.
- Bernier J, Cooper JS, Pajak TF, et al. Defining risk levels in locally advanced head and neck cancers: A comparative analysis of concurrent postoperative radiation plus chemotherapy trials of the EORTC (#22931) and RTOG (# 9501). Head Neck. 2005:27:843–850.
- Bachaud JM, Cohen-Jonathan E, Alzieu C, et al. Combined postoperative radiotherapy and weekly cisplatin infusion for locally advanced head and neck carcinoma: final report of a randomized trial. *Int J Radiat Oncol Biol Phys.* 1996 Dec 1; 36:999–1004.
- Vermorken JB, Remenar E, van Herpen C, et al; EORTC 24971/TAX 323 Study Group. Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. N Engl J Med. 2007;357(17):1695–1704.
- Posner MR, Hershock DM, Blajman CR, et al. Cisplatin and fluorouracil alone or with docetaxel in head and neck cancer. N Engl J Med. 2007;357(17):1705–1715.
- Pointreau Y, Garaud P, Chapet 5, et al. Randomized trial of induction chemotherapy with cisplatin and 5-fluorouracil with or without docetaxel for larynx preservation. J Natl Cancer Inst. 2009;101:498-506.
- Hiff R, LOpez-Pousa A, Martinez-Trufero J, et al. Phase III study comparing cisplatin plus fluorouracil to paclitaxel, cisplatin, and fluorouracil induction chemotherapy followed by chemoradiotherapy in locally advanced head and neck cancer. J Clin Oncol. 2005:23:8636–8645.

- Al-Sarraf M, LeBlanc M, Gin PG, et al. Chemoradiotherapy versus radiotherapy in patients with advanced nasophanyngeal cancer: phase III randomized Intergroup study 0099. J Clin Oncol 1998;16:1310–1317.
- Chan AT, Leung SF, Ngan RK, et al. Overall survival after concurrent cisplatin-radiotherapy compared with radiotherapy alone in locoregionally advanced nasopharyngeal carcinoma. J Natl Cancer Inst. 2005;97:536–539.
- Lee AW, Tung SY, Chua DT, et al. Randomized trial of radiotherapy plus concurrent-adjuvant chemotherapy vs radiotherapy alone for regionally advanced nasopharyngeal carcinoma. J Natl Cancer Inst. 2010:102:1188-1198.
- Dechaphunkul T, Pruegsanusak K, Sangthawan D, et al. Concurrent chemoradiotherapy with carboplatin followed by carboplatin and 5- fluorouracii in locally advanced nasopharyngeal carcinoma. Head Neck Oncol. 2011;3:30.
- Bae WK, Hwang JE, Shim HJ, et al. Phase II study of docetaxel, cisplatin, and 5-FU induction chemotherapy followed by chemoradiotherapy in locoregionally advanced nasopharyngeal cancer. Cancer Chemother Pharmacol. 2010;65(3):589-595.
- 25. Gibson MK, Li Y, Murphy B, Hussain MH, DeConti RC, Ensley J, Forastiere AR; Eastern Cooperative Oncology Group. Random- ized phase III evaluation of cisplatin plus fluorouracil versus cisplatin plus paclitaxel in advanced head and neck cancer (E1395): an intergroup trial of the Eastern Cooperative Oncology Group. J Clin Oncol. 2005; 23:3562-3567.
- Vermorken JB, Mesia R, Rivera F, et al. Platinum-based chemotherapy plus cetuximab in head and neck cancer. N Engl J Med. 2008;359:1116-1127.
- Samlowski WE, Moon J, Kuebler JP, et al. Evaluation of the combination of docetaxel/carboplatin in patients with metastatic or recurrent squamous cell carcinoma of the head and neck (SCCHN): a Southwest Oncology Group Phase II study. Cancer Invest. 2007:25:182–188.
- Burtness B, Goldwasser MA, Flood W, Mattar B, Forastiere AA; Eastern Cooperative Oncology Group. Phase III randomized trial of cisplatin plus placebo compared with cisplatin plus cetuximab in metastatic/recurrent head and neck cancer: an Eastern Cooperative Oncology Group study. J Clin Oncol. 2005;23(34):8646-8654.
- Forastiere AA, Metch B, Schuller DE, et al. Randomized comparison of cisplatin plus flurouracil and carboplatin plus fluorouracil versus methotrexate in advanced squamous cell carcinoma of the head and neck: A Southwest Oncology Group Study. J Clin Oncol. 1992;10:1245–1251.
- Chan AT, Hsu MM, Goh BC, et al. Multicenter, phase II study
 of cetuximab in combination with carboplatin in patients with
 recurrent or metastatic nasopharyngeal carcinoma. J Clin
 Oncol. 2005;23:3568-3576.
- Chen C, Wang FH, Wang ZQ, et al. Salvage gemcitabinevinorelbine chemotherapy in patients with metastatic nasopharyngeal carcinoma pretreated with platinum-based chemotherapy. Oral Oncol. 2012;48:1146-1151.
- Jacobs C, Lyman G, Velez-Garcla E, et al. A phase III randomized study comparing cisplatin and fluorouracil as single agents and in combination for advanced squamous cell carcinoma of the head and neck. J Clin Oncol. 1992; 10:257–263.
- 33. Jeremic B1, Shibamoto Y, Stanisavljevic B, et al. Radiation therapy alone or with concurrent low-dose daily either cisplatin or carboplatin in locally advanced unresectable squamous cell carcinoma of the head and neck: a prospective randomized trial. Radiother Oncol. 1997 Apr;43(1):29–37.

HEAD AND NECK CANCER TREATMENT REGIMENS (Part 5 of 5)

References (continued)

- Grau JJ, Caballero M, Verger E, et al. Weekly paclitaxel for platin-resistant stage IV head and neck cancer patients. Acta Otolaryngol. 2009;129:1294–1299.
- 35. Catimel G, Verweij J, Mattijssen V, et al. Docetaxel (Taxotere): an active drug for the treatment of patients with advanced squamous cell carcinoma of the head and neck. EORTC Early Clinical Trials Group. Ann Oncol. 1994;5:533–537.
- Guardiola E, Peyrade F, Chaigneau L, et al. Results of a randomised phase II study comparing docetaxel with methotrexate in patients with recurrent head and neck cancer. Eur J Cancer. 2004;40:2071–2076.
- Stewart JS, Cohen EE, Licitra L, et al. Phase III study of gefitinib compared with intravenous methotrexate for recurrent squamous cell carcinoma of the head and neck [corrected]. J Clin Oncol. 2009:27:1864–1871.
- 38. Vermorken JB, Trigo J, Hitt R, et al. Open-label, uncontrolled, multicenter phase II study to evaluate the efficacy and toxicity of cetuximab as a single agent in patients with recurrent and/or metastatic squamous cell carcinoma of the head and neck who failed to respond to platinum-based therapy. J Clin Oncol. 2007;25:2171–2177.
- Martin M, Diaz-Rubio E, Gonzalez Larriba JL, et al. Ifosfamide in advanced epidermoid head and neck cancer. Cancer Chemother Pharmacol. 1993;31:340–342
- Eschwege F, Sancho-Gamier H, Gerard JP, et al. Ten-year results of randomized trial comparing radiotherapy and concomitant bleomycin to radiotherapy alone in epidermoid carcinomas of the oropharynx: experience of the European Organization for Research and Treatment of Cancer. NCI Monogr. 1988;(6):275–278.
- Minatel E, Gigante M, Franchin G, et al. Combined radiotherapy and bleomycin in patients with inoperable head and neck cancer with unfavourable prognostic factors and severe symptoms. Oral Oncol. 1998;34:119–122.

- Zhang L, Zhang Y, Huang PY, et al. Phase II clinical study
 of gemcitabine in the treatment of patients with advanced
 nasopharyngeal carcinoma after the failure of platinumbased chemotherapy. Cancer Chemother Pharmacol. 2008;
 61:33–38. Epub 2007 Mar 20.
- Martinez-Trufero J, Isla D, Adansa JC, et al. Phase II study of capecitabine as palliative treatment for patients with recurrent and metastatic squamous head and neck cancer after previous platinum-based treatment. Br J Cancer. 2010; 102:1687–1691.
- Degardin M, Oliveira J, Geoffrois L, et al. An EORTC-ECSG phase II study of vinorelbine in patients with recurrent and/or metastatic squamous cell carcinoma of the head and neck. Ann Oncol. 1998;9:1103–1107.
- Saxman 5, Mann B, Canfield V, et al. A phase II trial of vinorelbine in patients with recurrent or metastatic squamous cell carcinoma of the head and neck. Am J Clin Oncol. 1998;21: 398–400.
- Chitapanarux I, Lorvidhaya V, Kamnerdsupaphon P, et al. Chemoradiation comparing cisplatin versus carboplatin in locally advanced nasopharyngeal cancer: Randomised, non-inferiority, open trial. Eur J Cancer. 2007;43:1399–1406.
- 47. Haddad R, O'Neill A, Rabinowits G, et al. Induction chemotherapy followed by concurrent chemoradiotherapy (sequential chemoradiotherapy) versus concurrent chemoradiotherapy alone in locally advanced head and neck cancer (PARADIGM): a randomised phase 3 trial. *Lancet Oncol.* 2013;14:257–264.
- Lefebvre JL, Pointreau Y, Rolland F, et al. Induction chemotherapy followed by either chemoradiotherapy or bioradiotherapy for larynx preservation: the TREMPLIN randomized phase II study. J Clin Oncol. 2013;31:853–859.

(Revised 6/2014) © 2014 Haymarket Media, Inc.