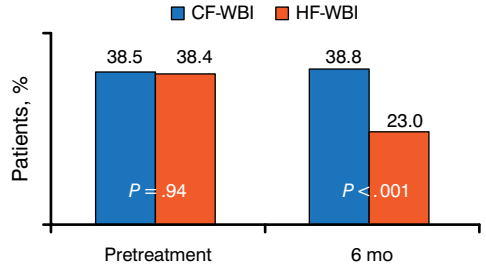
Figure 1. Fatigue Reported by Hypofractionation and Conventional Fractionation Groups

6-Month Patient FACT-B Scores

	CF-WBI	HF-WBI	*P* Value
Mean physical well-being score	24.7	25.4	.07
Lack of energy: somewhat or worse, %	38.8	23.0	< .001

Patient-Reported FACT-B Fatigue Score ≥ 2



CF, conventional fractionation; FACT-B, Functional Assessment of Cancer Therapy-Breast; HF, hypofractionation; WBI, whole breast irradiation.

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Table 1. WBI Toxicity Grade ≥ 2 Reported at 6 Months

	CF-WBI, %	HF-WBI, %	*P* Value
Fatigue	6.4	0.0	.009
Hyperpigmentation	7.8	11.4	.12
Skin induration	1.4	0.8	.38
Dermatitis	0.7	0.0	.64
Telangiectasias	0.7	2.4	.22
Skin ulceration	0.0	0.0	n/a
Wound complications, noninfectious	0.0	0.0	n/a
Breast infection	0.7	0.7	.36
Wound infection	0.0	0.0	n/a
Upper extremity edema	0.0	0.0	.92
Breast edema	5.0	1.6	.08

CF, conventional fractionation; HF, hypofractionation; n/a, not applicable; WBI, whole breast irradiation.

were postmenopausal. About 15% of patients had grade 3 tumors, most had T1, N0 disease, and the majority had hormone receptor–positive, human epidermal growth factor 2–negative tumors. About 10% of patients had received neoadjuvant chemotherapy.

Baseline FACT-B mean scores for physical well-being and level of energy were essentially identical between the 2 groups. At 6 months after RT, physical well-being scores showed a trend of being slightly worse among patients treated with CF-WBI (*P* = .07). The percentage of patients reporting lack of energy "somewhat or worse" at 6 months was much higher in the CF-WBI group (38.3% to 23.0% for the HF-WBI group) and was statistically significant (*P* < .001; Figure 1).

Acute grade ≥ 2 toxicity was recorded weekly during RT and again at 6 months (Table 1). During weekly reports, 46.4% of HF-WBI patients had any acute grade ≥ 2 toxicity, compared with 77.9% for CF-WBI (*P* < .001), and HF-WBI patients had no acute grade ≥ 3 toxicities, compared with 5.4% for CF-WBI (*P* = .006). Although acute toxicity reporting at 6 months showed HF-WBI to be lower in 4 of 6 categories, the data were less clear-cut, with only fatigue data being statistically significant. Cosmesis data per se were not reported, because these are interim data sets (6 months), although several categories of acute toxicity could be used to infer aspects of cosmetic appearance.

Dr Shaitelman concluded that by the end of RT, the HF-WBI patients had less acute toxicity than those who had received CF-WBI. She added that the HF-WBI patient scores for patient-reported and physician-reported rates of fatigue 6 months after completing radiation were lower than those for CF-WBI and trended toward improved physical well-being in the HF-WBI arm.

PT May Be Safer Than PF Chemoradiotherapy for LAEC

Written by Emma Hitt Nichols, PhD

Neoadjuvant chemoradiation therapy (nCRT) with carboplatin/paclitaxel (PT) has similar perioperative outcomes as platinum/5-FU (PF) in patients with locally advanced esophageal cancer (LAEC) but may have less toxicity. Abigail Berman, MD, University of Pennsylvania, Philadelphia, Pennsylvania, USA, presented findings from a retrospective analysis of patients with LAEC who were treated from 2008 to 2013.

Current nCRT for LAEC consists of radiation with PF chemotherapy. However, PT may be a favorable chemotherapy combination with preoperative radiation. This study investigated whether nCRT with PT would result in better perioperative outcomes.

A total of 100 consecutive patients were assessed; criteria included stage II to IV LAEC with a European Cooperative Oncology Group performance status of

0 to 1. The median radiation dose was 50.4 cGy (range, 45 to 59.4 cGy); 51% of patients received PF while 49% received PT. Most patients had adenocarcinoma (93%) of the esophagus and were male (86%) with a median age of 65 (range, 29 to 78). Follow-up assessments were examined, and perioperative complications were categorized as composite toxicity (hospital readmission) or acute toxicities in the pulmonary, cardiac, and gastrointestinal systems.

There was no difference in overall survival in PF versus PT patients (76% vs 70%; $P = .70$). Pathologic complete response was similar in patients treated with PF and PT (24% vs 25%; $P = .91$). There were also comparable rates of locoregional recurrence (18% vs 10%; $P = .28$) and distant metastases (22% vs 18%; $P = .65$).

There were no significant differences in baseline characteristics between the 2 groups or in pulmonary, cardiac, or gastrointestinal complications. However, patients treated with PF were readmitted more often than patients treated with PT (42% vs 22%; $P = .04$).

This study showed that PT nCRT and PF nCRT have comparable effects on a variety of outcomes. The authors concluded that reduced readmission rates suggest that PT may produce less composite toxicity during nCRT of LAEC.

Radiation Method Comparison for Esophageal Carcinoma

Written by Emma Hitt Nichols, PhD

Esophageal carcinoma treatment response to intensity-modulated radiation therapy (IMRT) was not significantly different from 3-dimensional conformal radiation therapy (3DCRT). Jie Kong, MD, Department of Radiation Oncology, The Fourth Hospital of Hebei Medical University, Shijiazhuang, China, presented results from this retrospective analysis.

IMRT and 3DCRT are common radiation methods used to treat patients with esophageal cancer at Dr Kong's institution. This retrospective study examined differences in patient response and the extent of dosage to organs at risk (OAR) of these targeted radiation techniques.

Treatment response, overall survival, and dosage of OAR were assessed in 510 consecutive patients. Most patients had squamous cell esophageal carcinoma (92.8%). At the discretion of the radiation oncologist, IMRT was administered to 66 patients and 3DCRT to 444 patients. Regardless of method, patients received roughly 2 Gy per day, 5 days a week and may have received concurrent and/or subsequent chemotherapy.

There were no significant differences in any of the measured outcomes between IMRT and 3DCRT. Overall survival rates were similar (27.3% vs 23.4%), as were 1-year (72.7% vs 68.2%) and 5-year (32.3% vs 25.5%) survival rates. Although the complete response rate for patients treated with IMRT was slightly higher than 3DCRT (60.6% vs 53.2%), it was not statistically different.

The dosage of OAR in the lung and heart showed no overall differences, but there was less variation for IMRT vs 3DCRT. The median percentage of pulmonary volume receiving radiation >20 Gy for IMRT) was similar to 3DCRT (25.2 vs 24) but showed less variation (Q1–Q3 range, 22.6–26.9 for IMRT vs 18.6–27.4 for 3DCRT). The V40 for the heart was also more variable with IMRT (median 20.2; range, 5.9–28.4) compared with 3DCRT (median 17.3; range, 11.2–40.4).

Dr Kong concluded that IMRT was no more effective than 3DCRT, but further investigation of the variability of dosage of OAR may be warranted.

Invasive Mediastinal Staging Is Not Necessary for Early-Stage NSCLC Before SBRT

Written by Emma Hitt Nichols, PhD

Invasive mediastinal staging methods did not provide added outcome benefits over positron emission tomographic (PET) imaging alone in patients with non–small cell lung cancer (NSCLC). Roy Decker, MD, PhD, Yale University School of Medicine, New Haven, Connecticut, USA, presented data from this retrospective analysis.

Stereotactic body radiotherapy (SBRT) is a treatment option for patients with NSCLC who are not eligible for surgical intervention. The staging workup for patients with NSCLC receiving stereotactic SBRT requires an initial PET imaging. However, in some cases, nodal status is confirmed by mediastinoscopy or endobronchial ultrasonography. The supplementary information obtained by these invasive mediastinal procedures has not been well studied in NSCLC. This study assessed whether additional staging improved outcomes in patients with NSCLC.

A total of 286 patients with early-stage NSCLC who received either PET-only (68%) or PET-plus-invasive mediastinal staging (32%) were included in the analysis. Patients with larger tumors (>3 cm), synchronous primary lesions, and central lesions were more likely to receive PET-plus-invasive mediastinal staging. Survival distributions and hazard ratio analyses were completed in this assessment.