with 2 dose cycles of concurrent chemotherapy. After 5 weeks of treatment, each group received 4 to 6 dose cycles of CapOx and fluorouracil.

By 3-year follow-up, there were no differences in disease-free survival rate in the Cap group compared with the CapOx group (71.79% vs 71.6%; $P = .799$). Overall survival rates were also similar (89.0% vs 85.1%, $P = .916$). Although there was no difference in cumulative metastatic rate (19.9% vs 20.7%, $P = .834$), patients in the Cap group had a higher local recurrence rate than those in the CapOx group (8.1% vs 3.2%, $P = .034$).

There were no newly identified toxicities in either group. However, the Cap group had significantly fewer cases of thrombocytopenia (6.7% vs 14.2%, $P = .012$) and fatigue (60.3% vs 71.8%, $P = .014$).

The authors concluded that although there were significant differences in local recurrences, further patient recruitment is needed to obtain planned sample size calculations.

Concomitant TMZ Does Not Improve Effectiveness of WBRT for Brain Metastases From Breast Cancer

Written by Emma Hitt Nichols, PhD

The addition of temozolomide (TMZ) does not improve the efficacy of whole-brain radiation therapy (WBRT) for the treatment of brain metastases from breast cancer. Kim I. Cao, Institut Curie, Paris, France, and colleagues presented data from a phase 2 prospective randomized multicenter study.

TMZ, an oral alkylating agent, has radiosensitizing properties and has demonstrated promise in previous phase 2 studies involving WBRT. However, these studies did not include sufficient samples of patients with brain metastases from breast cancer, despite the need for improved treatments for such patients. The present phase 2 trial was intended to determine whether concomitant TMZ with WBRT could improve outcomes for these patients.

Patients were eligible for this study if they had intraparenchymal metastases from breast cancer that were newly diagnosed, inoperable, and not suitable for radiosurgery. A total of 100 patients were randomly assigned to 2 treatment groups, one of which received WBRT (3 Gy × 10 to 30 Gy) alone, while the other received WBRT concomitantly with 75 mg/m^2/d of TMZ.

Radiologic objective response was the primary end point, determined by brain magnetic resonance imaging 6 weeks after the end of treatment. This end point was defined as a partial or complete response based upon World Health Organization–modified criteria. There were multiple secondary end points, including overall survival (OS) and local progression-free survival (PFS). Neurologic symptoms and safety data were also collected.

The primary end point was similar between the 2 study arms; the objective response rates were 30% and 36% for concomitant (WBRT + TMZ) therapy and for WBRT alone, respectively, which was not a significant difference. No patients showed complete response. Neither the median OS nor PFS was statistically significant. The median OS was 11.1 months in the WBRT arm compared with 9.4 months in the concomitant therapy arm. The median PFS was 7.4 months in the WBRT arm compared with 6.9 months in the concomitant therapy arm. The concomitant therapy arm did not show more neurologic improvement than the WBRT arm. Additionally, the concomitant therapy was well tolerated (reversible lymphopenia was the most serious acute toxicity).

The authors concluded that adding TMZ to WBRT did not significantly improve outcomes in patients with brain metastases from breast cancer on the basis of the outcomes studied.

Radiotherapy With and Without T for GBM

Written by Emma Hitt Nichols, PhD

Hypofractionated radiotherapy (HRT) is more effective with temozolomide (T) than without it and as effective as standard (Stupp regimen) radiotherapy (SRT) with T in improving the overall survival of elderly patients with glioblastoma (GBM). Shyam Tanguturi, MD, Brigham and Women's Hospital, Boston, Massachusetts, USA, and colleagues presented data from a retrospective study.

The Stupp regimen of HRT (SRT) is commonly used with T for the treatment of elderly patients with GBM. However, there has been insufficient study, and no randomized trials, comparing SRT with and without T to HRT. This retrospective study was designed to compare SRT and HRT alone and with T (SRT + T and HRT + T, respectively).

One hundred thirty-five patients who had been treated with SRT (59.4–60 Gy in 30–33 fractions) or HRT (40 Gy in 15 fractions) alone or with T (SRT + T and HRT + T) and who had been diagnosed with GBM between 1994 and 2013 were included in this study. Prognostic factors and overall survival were calculated.

The primary end point was overall survival. The data were also analyzed to determine if other factors, such as prognostic factors, differed between the groups or were associated with increased mortality.

Overall survival was 9.5, 11.1, 4.1, and 9.6 months for SRT, SRT + T, HRT, and HRT + T, respectively. On multivariable analysis, there was no significant difference in all-cause mortality between HRT + T and SRT + T ($P = .57$). In contrast, all-cause mortality was significantly higher for HRT alone ($P = .007$) and for SRT alone ($P = .03$) compared with SRT + T. Other factors associated with increased mortality were greater age, lower Karnofsky performance score (KPS), and multifocal tumors.

Although the groups were not significantly different in many aspects (such as gender, tumor size, and extent of resection), there were several important exceptions. For example, HRT ± T patients were older than the SRT ± T patients (median age, 79 vs 69 years, respectively) and had lower KPSs.

The authors concluded that adding T to HRT could substantially reduce, and possibly halve, the number of radiotherapy treatments needed for elderly patients with GBM. They recommend randomized trials to further elucidate the effectiveness of HRT + T compared with other treatments.

Concurrent Chemoradiotherapy Tolerated in Recurrent HNSCC

Written by Emma Hitt Nichols, PhD

Concurrent reirradiation and combined chemotherapy treatment were tolerable in patients with recurrent head and neck squamous cell carcinoma (HNSCC). Min Yao, MD, PhD, University Hospitals Case Medical Center, Cleveland, Ohio, USA, presented data from a multicenter prospective phase 2 study.

Due to the poor prognosis of recurrent HNSCC, there is an imperative to identify a safe and tolerable therapy course. Despite the prevalence of combined radiotherapy and chemotherapy, an optimal therapeutic regimen has not been elucidated. This study assessed limited-volume continuous-course intensity-modulated reirradiation (IMRT) and weekly cetuximab with platinum-based chemotherapy.

A total of 46 patients (26% female) with recurrent HNSCC and unresectable tumors or positive margins after surgery participated in this trial. All patients had an Eastern Cooperative Oncology Group performance status of 0 to 1 and previously received radiotherapy for >6 months without the combination of drugs used in this study.

Over the course of a 7-week period, patients received daily continuous-course IMRT at a dose of 60 to 66 Gy in 30 fractions to the gross tumor volume. During week 1, a loading dose of 400 mg/m^2 of cetuximab was administered. During weeks 2 to 7, concurrent cetuximab (250 mg/m^2) and cisplatinum (30 mg/m^2) were applied.

The 1-year overall survival rate was 60%, and at the final follow-up, 27 patients were alive. The 1-year disease-free survival rate was 38%. This therapeutic regimen had a range of grade 1 to 4 acute toxicities, with the most common higher-grade toxicities being lymphopenia, dysphagia, radiation-site dermatitis, mucositis, and anorexia. A single patient discontinued treatment.

Some patients experienced local toxicities 90 days after reirradiation, and the highest-grade complication was associated with dysphagia (grade 3). The most common late toxicities were dysphagia, xerostomia, edema, mucositis, fibrosis, and trismus.

The authors determined that patients with recurrent HNSCC could complete a concurrent reirradiation and chemotherapy trial. Further examination of treatment optimization for this disease stage is necessary.

FDG-PET in Cervical Cancer Patients Without Extrapelvic Metastasis

Written by Emma Hitt Nichols, PhD

Prescreens for extrapelvic lymph node metastases using ^{18}F-fluorodeoxyglucose positron emission tomography (FDG-PET) did not enhance survival rate but reduced the use of extended-field concurrent chemoradiation (CCRT). Ji-Hong Hong, MD, PhD, Chang Gung Memorial Hospital, Taoyuan, Taiwan, presented results of this prospective phase 3 trial.

Patients with cervical cancer in whom magnetic resonance imaging (MRI) identifies enlarged pelvic nodes may undergo further imaging with FDG-PET for further characterization. This study examined the impact of additional imaging on targeted radiation treatment and patient outcomes.

A total of 129 patients recently diagnosed with stage I to IVA cervical cancer participated in this study and had MRI-confirmed positive pelvic and negative paraaortic lymph nodes (PALNs). Patients were randomized to either a study group (51%) receiving FDG-PET or a control group (49%) assessed only by MRI. The FDG-PET group received irradiation with fields based on extrapelvic findings, while the control group received irradiation of the whole pelvic field.

There was no difference in freedom from extrapelvic metastasis between the FDG-PET and control groups