tolerance of treatment, predictive markers, and presence of circulating tumor cells were secondary endpoints.

In the LAP07 study, CRT was demonstrated not to be superior to chemotherapy in the treatment of LAPC. In the chemotherapy arm, OS was 16.4 months, compared with 15.2 months in the CRT arm (HR, 1.03; 95% CI, 0.79 to 1.34; p=0.8295). Following the first randomization, there was a trend for decreased OS in the gemcitabine plus erlotinib arm at 11.9 months compared with the gemcitabine arm at 13.6 months (HR, 1.19; 95% CI, 0.97 to 1.45; p=0.093); however, this result was not statistically significant.

Following the first randomization, a greater number of patients experienced adverse events such as decreased hemoglobin, febrile neutropenia, diarrhea, and acneiform rash in the gemcitabine plus erlotinib arm, compared with the gemcitabine arm. Following the second randomization, both treatment regimens were well tolerated with a similar frequency of adverse events except for an increase in the number of patients that experienced nausea in the CRT arm (0 vs 6 patients; p=0.009).

Dr. Hammel stated that, in his opinion, the data from the LAP07 trial suggest that the standard of care for the treatment of LAPC should be chemotherapy, with CRT reserved for use as an option if the disease is controlled by chemotherapy. Although CRT or erlotinib provided no additional advantage to patients in the present study, there may be a subset of patients that could benefit, which is currently under investigation.

Targeting Telomerase With GV1001 Vaccine Does Not Prolong OS in Advanced Pancreatic Cancer

Written by Emma Hitt, PhD

Sequential or concurrent treatment with the vaccine GV100 with chemotherapy does not result in a survival advantage in patients with advanced pancreatic cancer. Gary W. Middleton, MD, University of Birmingham, Birmingham, United Kingdom, presented data from the fourth interim analysis of the Gemcitabine and Capecitabine With or Without Vaccine Therapy in Treating Patients With Locally Advanced or Metastatic Pancreatic Cancer study [TeloVac; NCT00425360; Middleton GW et al. *J Clin Oncol* 2013 (suppl; abstr LBA4004)].

Reactivation of the telomerase enzyme is a common mechanism by which cancer cells prevent their senescence and ~80% of pancreatic cancers overexpress telomerase. The GV1001 vaccine targets the hTERT subunit of telomerase that is expressed on the surface of pancreatic cancer cells. In addition, gemcitabine (GEM) has been demonstrated to have immune priming effects that are dependent on the dosing schedule [Nowak AK et al. *Cancer Res* 2003]. The hypothesis of the TeloVac study was that the addition of GV1001 to the current standard of care for advanced pancreatic cancer would provide an overall survival (OS) advantage.

In the multicenter, Phase 3 TeloVac trial, 1062 patients with advanced pancreatic cancer and an ECOG PS of 0 to 2 were randomized 1:1:1 to receive GEM plus capecitabine (CAP); GEM plus CAP followed by GV1001 followed by additional chemotherapy if disease had not progressed by Week 8; and concurrent administration of GEM, CAP, and GV1001.

The median follow-up was 6.11 months and 72.7% of patients died during the study. The primary endpoint was OS. Overall response rate (ORR), time to progression (TTP), and adverse events were secondary endpoints. Prof. Middleton commented that the TeloVac trial was closed following the fourth interim analysis due to declaration of futility.

Administration of GV1001 did not provide a significant benefit when given concurrently or sequentially following GEM and CAP therapy. OS in the sequential GV1001 arm was statistically nonsignificantly inferior at 6.94 months with a 12-month survival rate of 25.3% (HR, 1.19; 95% CI, 0.97 to 1.48; p=0.0466), compared with 7.89 months and 33.7% in the GEM plus CAP arm and 8.36 months and 32.3% in the concurrent arm (HR, 1.05; 95% CI, 0.85 to 1.29; p=0.6378). The ORR was 17.6% in the GEM plus CAP arm (referent), 8.6% in the GEM plus CAP with sequential GV1001 arm (p=0.001), and 15.5% in the concurrent GEM, CAP, and GV1001 arm (p=0.536).

Sequential GV1001 therapy also resulted in a significant inferiority in TTP compared with the other two arms (HR, 1.50; 95% CI, 1.26 to 1.78; p<0.001). The frequency of hematologic and nonhematologic adverse events was similar among each of the treatment arms.

Although GV1001 was well tolerated, it did not appear to provide a benefit in regard to OS, TTP, or ORR. Prof. Middleton pointed out that in the GV1001 sequential arm, progression rates began to increase as soon as patients discontinued chemotherapy for GV1001 treatment, although this did not translate into a significant difference. Immunological analyses, including for predictive biomarkers, are currently ongoing.

Treatment Based on BRCA1 and RAP80 Does Not Extend PFS

Written by Emma Hitt, PhD

Patients that received customized lung cancer treatment based on their levels of BRCA1 and RAP80 did not experience an improvement in progression-free survival