

Materials/Methods: Twenty-six patients with HGG (15 grade-III, 11 grade-IV) were evaluated with cSCS devices inserted prior to scheduled radio-chemotherapy. They were: men/female: 18/8; mean age: 50 years old (range: 23–73). Karnofsky \geq 70% or ECOG \leq 2. Pre- and post-cSCS, patients were evaluated with different techniques:

- *Between April-1995 and February-1999:* 1) Middle cerebral artery velocity measurements (cm/s) using Transcranial Doppler (TCD), bilaterally: 12 patients. 2) Common carotid blood flow quantification (ml/min) based on time-domain processing using color Doppler, bilaterally: 8 patients. 3) Tissue blood flow assessment by Single Photon Emission Computed Tomography (SPECT) in tumor area and healthy contra-lateral area: 13 patients.
- *Between August-1997 and June-2005:* 4) Tumor pO₂ measurement (mmHg) using the polarographic probe technique (Eppendorf device): 8 tumor areas from 5 patients.
- *Between March-2000 to December-2005:* 5) glucose metabolism assessment by ¹⁸F-DG Positron Emission Tomography (¹⁸F-DG-PET) in tumor, peri-tumor and healthy contra-lateral areas: 14 patients.

Results:

- *Pre-cSCS results showed:*
 - SPECT: tumor blood-flow was lower ($p < 0.001$) in tumor sites than peri-tumor sites (32%) and contra-lateral areas (41%).
 - Polarographic probes: relative to healthy brain tissue, tumor median pO₂ was 50% lower ($p < 0.042$), and percentage of values < 10 mmHg (48.5%) and < 5 mmHg (30.6%) were 3 times higher: $p = 0.010$ and $p = 0.052$ respectively.
 - ¹⁸F-DG-PET: glucose metabolism in tumor was 53% higher in tumor areas than peri-tumor areas ($p = 0.017$) and 47% higher than healthy contra-lateral areas ($p = 0.048$).
- *Post-cSCS results showed:*
 - TCD: bilateral blood-flow increase in middle cerebral arteries $> 18\%$ ($p < 0.002$);
 - Doppler color: bilateral blood-flow increase in common carotid arteries $> 61\%$ ($p < 0.013$);
 - SPECT: tumor blood-flow increased 15% ($p = 0.033$);
 - Polarographic probes: tumor pO₂ increased from 12.8 to 26.5 mmHg ($p = 0.022$); percentage of values < 10 mmHg decreased from 48.5% to 20.2% ($p = 0.006$); percentage of values < 5 mmHg decreased from 30.6% to 14.6% ($p = 0.007$).
 - ¹⁸F-DG-PET: Glucose metabolism increased 39% in tumor ($p = 0.028$) and 37% ($p = 0.001$) in peri-tumor areas. The estimated maximal residual contribution from first to second PET studies was $\leq 18\% \pm 1\%$.

Conclusions: Our data show that cSCS can modify loco-regional blood flow, oxygen and glucose-metabolism in HGG. This suggests that cSCS could be used as a potential modifier of HGG microenvironment to increase radiation effect and chemotherapy delivery. We think that their potential role as and adjuvant treatment during radio-chemotherapy in this tumors merits further researches. Works using FMISO-PET are in progress.

This study was partially supported by Grants: FUNCIS 31/98, FUNCIS 9/03, ICIC ISCiii, RTICCC C03/10 and FIS 06-1413. Scientific supervision by GICOR (Grupo de Investigación Clínica en Oncología Radioterápica, Spain)

Author Disclosure: B. Clavo, None; F. Robaina, In the past, C. Other Research Support; In the past, F. Consultant/Advisory Board; B. Balcarcel, None; L. Catala, None; J.L. Perez, None; A. Cabezon, None; I.J. Jorge, None; M.A. Hernandez, None; R. Jover, None; J.L. Carreras, None.

190 A Phase II Study of a Paclitaxel Based Chemoradiation Regimen With Selective Surgical Salvage for Resectable Locoregionally Advanced Esophageal Cancer: Initial Reporting of RTOG 0246

S. Swisher¹, K. Winters², R. Komaki¹, J. Ajani¹, T. Wu³, W. Hofstetter¹, A. Konski⁴, C. Willett⁵

¹University of Texas M.D. Anderson Cancer, Houston, TX, ²RTOG, Philadelphia, PA, ³Mayo Clinic, Rochester, MN,

⁴Fox Chase Cancer Center, Philadelphia, PA, ⁵Duke University Medical Center, Durham, NC

Purpose/Objective(s): The strategy of definitive chemoradiation with selective surgical salvage has not previously been evaluated in a multi-center, prospective Phase II trial.

Materials/Methods: This study was designed to detect an improvement in 1-yr survival from 60% to 77.5% ($\alpha = 0.05$; power = 80%) with 38 pts. Treatment involved induction chemotherapy with 5-FU (650 mg/mg²/d), cisplatin (15 mg/mg²/d) and paclitaxel (200 mg/mg²/d) for 2 cycles followed by concurrent chemoradiation with 50.4 Gy (1.8 Gy/tx) and daily 5-FU (300 mg/mg²/d) with cisplatin (15 mg/mg²/d) over the first 5 days. Following definitive chemoradiation, pts were monitored with serial chest and abdominal CT scans, EUS and optional PET scans for residual or recurrent esophageal cancer. Salvage surgical resection was considered for pts with recurrent locoregional esophageal cancer who did not have systemic disease.

Results: 43 pts from Sept 2003 to March 2006 with non-metastatic resectable esophageal cancer were entered from 18 sites in RTOG 0246. 40 pts were eligible for analysis. 33 pts (83%) were male with a median age of 60 yrs (42–81 yrs) and adenocarcinoma histology in 29 pts (73%). Pretreatment clinical stage was T3 or greater in 30 pts (75%) and N1 in 28 pts (70%). Induction chemotherapy was started in 40 pts (100%) and was followed by concurrent chemoradiation in 37 pts (93%). 28 pts (70%) and 7 pts (18%) experienced an acute grade 3+ hematologic or non-hematologic toxicity, respectively. 7 pts (18%) experienced an acute grade 4+ toxicity, none hematologic. 1 pt died during induction therapy and 1 pt died 95 days after treatment from pneumonitis. Surgical salvage was attempted in 18 pts (45%). 17 pts underwent surgery because of residual or recurrent esophageal cancer and 1 pt choice. 16 pts had an esophagectomy and 2 patients had exploration only. 1 pt died (5.6%) following surgery from anastomotic leak. 22 pts (55%) did not undergo surgery because of lack of residual disease (15 pts), medical inoperability (1 pt), metastatic disease (3 pts) or pt death (3 pts). With median follow-up of 15.4 mos (for alive pts), estimated 1 yr survival is 72% and estimated disease free survival is 39%. 13 pts remain alive and disease free 5 to 23 mos following initiation of treatment.

Conclusions: Although the hypothesized 1-yr survival rate was not achieved, this multi-center, prospective Phase II trial demonstrates the feasibility following definitive chemoradiation of a selective surgical salvage approach in locoregionally advanced esophageal cancer. Supported by NCI grants U10 CA21661, U10 CA37422, U10 CA32115.

Author Disclosure: S. Swisher, None; K. Winters, None; R. Komaki, None; J. Ajani, None; T. Wu, None; W. Hofstetter, None; A. Konski, None; C. Willett, None.