chemotherapy (CHT) and surgical resection. According to this approach, all pts receive the same CHT regimen in the neoadjuvant and postoperative setting, regardless of their tumors' pathological response. The CRITICS trial, comparing perioperative CHT with preoperative CHT followed by postoperative chemoradiotherapy (CRT), failed to demonstrate an improved overall survival (OS) with the addition of CRT, but subgroup analysis based on pathologic response to neoadjuvant CHT was not reported yet. The current study aims to evaluate treatment outcomes in pts with poor pathologic response to neoadjuvant CHT, who received postoperative CRT according to our institutional policy.

Material and Methods

A retrospective study on pts with LAGC in whom initial treatment strategy was perioperative CHT (ECX, EOX or ECF) and surgery (R0 or R1), but due to poor pathologic response, in their primary tumor and/or regional lymph nodes, to neoadjuvant CHT were treated with postoperative CRT. CRT consisted of 45 Gy in 25 fractions of 1.8 Gy, combined with capecetabine 825 mg/m2 twice daily on radiotherapy days or continuous infusion of 5FU. Radiation treatment planning was IMRT.

Results

Between 2011-2017, 20 pts were treated. Median age was 60 years. Thirteen pts (65%) had proximal gastric tumors, 10 (50%) had diffuse subtype and 13 (65%) had signet ring cell histology. Clinical stages were IIA-III. All pts underwent surgery with D1-D2 lymphadenectomy. R0 resection was achieved in 10 pts (50%). Pathological stage was IIA in 2 pts (10%), IIB in 3 (15%), III in 14 (70%) and IVA in 1 (5%). Eighteen pts (90%) had pT3-T4 tumors and 14 (70%) had N2-N3 disease. Fifteen pts (75%) received also adjuvant chemotherapy before postoperative CRT (same or another regimen as in the neoadjuvant setting). Treatment was well tolerated; it was stopped in only one pt, due to grade 4 vomiting. With a median follow-up time of 32.0 months (range: 12-112 months), recurrences was documented in 11 pts (55%): 5 regional, 4 distant, and 2 combined regional and distant recurrences. Median progression- free survival (PFS) was 20 months (range: 18-21months) and median OS has not been reached. Estimated 5-year PFS and OS were 42% and 56%, respectively.

Conclusion

In our small retrospective study, pts with LAGC assumed to have dismal prognosis due to poor pathologic response to neoadjuvant CHT, achieved a relatively good outcome following the addition of postoperative CRT, compared to reference arms in randomized trials (perioperative CHT arms in MAGIC and CRITICS). These results support the evaluation of an individualized treatment approach, tailored according to pathological response to neoadjuvant CHT, in future studies in this setting. Additional data, on more pts and longer follow-up, will be presented at the meeting.

PO-0795 Prediction of severe lymphopenia during chemoradiotherapy for esophageal cancer

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Purpose or Objective

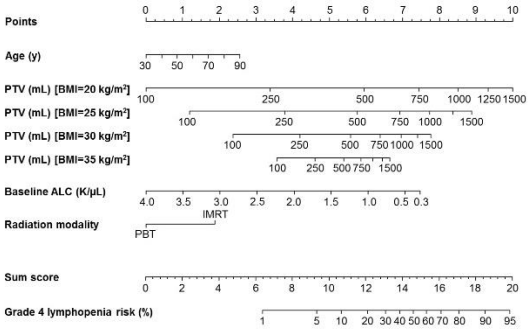
In esophageal cancer patients, occurrence of grade 4 radiation-induced lymphopenia during chemoradiotherapy (CRT) has been associated with worse progression-free survival (PFS) and overall survival (OS). The aim of this study was to develop, internally and externally validate a pretreatment clinical nomogram for the prediction of grade 4 lymphopenia to guide individualized treatment decision-making.

Material and Methods

Consecutive patients who underwent CRT for esophageal cancer at one center between 2004 and 2017 were identified. Absolute lymphocyte counts (ALCs) were obtained prior to, and weekly during CRT. Grade 4 lymphopenia was defined as ALC nadir <0.2 x10^3/μL. Potential pretreatment predictors were selected based on literature and clinical reasoning. After multiple imputation, final predictors were selected using multivariable logistic regression with backward stepwise elimination. Internal validation of the final model was performed using bootstrapping. The model was evaluated in terms of calibration and discrimination, corrected for optimism, and presented as nomogram yielding 4 risk groups based on individual nomogram sum scores. External validation was performed by applying the model to an independent cohort of esophageal cancer patients who underwent CRT at another institution between 2015 and 2017. Finally, the relationships between nomogram-based risk groups and PFS and OS were assessed.

Results

Among 860 included patients, 322 (37%) experienced grade 4 lymphopenia during CRT. Higher age, larger planning target volume (PTV) in interaction with lower BMI, photon- rather than proton-based therapy, and lower baseline ALC were predictive for grade 4 lymphopenia in the final model yielding a corrected c-statistic of 0.76. The resulting nomogram is presented in Figure 1. External validation of the nomogram in 144 patients from another institution, in whom 58 (40%) had grade 4 lymphopenia, yielded a c-statistic of 0.72. Applying the nomogram sum score (0 to 20), patients were divided into 4 risk groups yielding predicted grade 4 lymphopenia risk rates of 10%, 24%, 43%, and 70%, respectively, which were in good agreement with observed incidences. Risk groups showed statistically significant associations with survival, with 5-year PFS rates of 54%, 50%, 41%, and 40%, respectively, and 5-year OS rates of 55%, 49%, 44%, and 37%, respectively.



Conclusion

A pretreatment clinical nomogram for the prediction of grade 4 radiation-induced lymphopenia during CRT for esophageal cancer with a good model performance was developed and validated, both internally and externally. The nomogram allows for prediction of the risk of grade 4 radiation-induced lymphopenia for each individual patient, which in turn is associated with PFS and OS. The nomogram can aid in the selection of patients suitable for mitigating treatment strategies or potential future therapeutic approaches, which may ultimately improve survival.

PO-0796 Carbotaxol definitive chemoradiotherapy for inoperable oesophageal cancer: UK multicentre study

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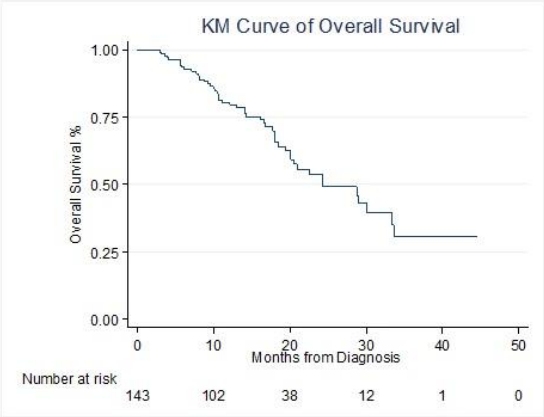
Purpose or Objective
The CROSS trial established weekly carbotaxol (CP) based CRT as standard of care for pre-operative treatment of oesophageal cancer. Given the promising outcome and low toxicity profile, this regimen is being increasingly used internationally as a component of definitive CRT (dCRT) for inoperable oeosphageal cancer, although no large studies demonstrate benefit or equivalence over standard cisplatin fluoropyrimidine (CF) based dCRT. In the UK, a national questionnaire demonstrated that although CF-dCRT remained treatment of choice, CP-dCRT was being offered to elderly patients, less fit patients and in those whom CF-dCRT was contra-indicated. We present the outcomes of CP-dCRT from a UK-wide national audit in this selective patient group.
Material and Methods
Appropriate UK centres were identified through a national questionnaire. All patients were treated with weekly carboplatin (AUC2) and paclitaxel (50mg/m2) dCRT with curative intent between 2011-2018. Patient and tumour demographics, indication for CP-dCRT, toxicity, response rates (as per endoscopy and imaging), recurrence and overall survival were collected.
Results
143 patients from 7 centres were included. Patient and tumour demographics are shown in Table 1.

Table 1

		n	%
Sex	Male	85	40.6%
	Female	58	59.4%
Age	Median (IQR, range)	73 ((64,78), 42-91)	
	70+	87	60.8%
	80+	25	17.5%
T stage	1	5	3.5%
	2	31	21.7%
	3	85	59.4%
	4	20	14.0%
	Missing	2	1.4%
N stage	0	59	41.3%
	1	59	41.3%
	2	21	14.7%
	3	4	2.8%
Site	Lower third	74	51.8%
	Middle third	58	40.6%
	Upper third	11	7.7%
Performance status	0	36	25.2%
	1	88	61.5%
	2	19	13.3%
Disease length (cm)	Median (IQR, range)	4.5 ((3.0, 6.1), 1-13)	
Histology	SCC	66	46.2%
	Adeno	77	53.8%

Median age was 73 years (range 42-91; 60.8%>70yrs; 17.5% >80 yrs). Indications for CP-dCRT included co-morbidities (48.3%), clinician choice (32.9%), poor tolerance/progression on induction chemo (18.9%). 43.4% received induction chemotherapy (commonly CF). 71.3% received IMRT, and 75.5% received 50Gy/25 fractions (dose range 41.4/23-64/32#). 96.5% completed RT and 85.3% completed ≥4 weekly infusions of CP. 36% of patients experienced at least one grade 3+ toxicity (haematological-12%, non-hematological-34%). The most common grade 3 non-haematological toxicities were nausea and vomiting (8%). There were 2 recorded deaths during treatment (oesophageal hemorrhage, duodenal perforation). At the post-treatment response assessment, 91 patients had an endoscopy, 121 had imaging, and 12 patients died prior to this point. 69.2% had complete response (CR) on endoscopy, 86.0% had CR/Partial response (PR)/Stable disease (SD) on imaging and 70.3% had combined CR on endoscopy with CR/PR/SD on imaging. In all patients, median follow-up was 17.2 months (95% CI 14.7-20.5), median OS was 24.3 months (95% CI 20.0-33.5), median overall/local/distant relapse free survival were 16.8 (95% CI 14.2-24.3)/20.3 (95% CI 16.8-28.8)/24.3 (95% CI 16.8-33.1) months respectively, and 31% of patients had relapsed.



Median overall survival: 24.31 months (95% CI: 20.01, 33.45)
Median duration of follow up: 17.22 months (95% CI: 14.65, 20.47)

In patients that had a post-treatment endoscopy (n=91), treatment response (CR on endoscopy with CR/PR/SD on imaging) was associated with superior survival on multi-variate cox regression (HR 4.79 (95% CI 1.83-12.55, p=0.001)).
Conclusion
CP-dCRT is safe and deliverable in elderly and "poor performance" patients who would have otherwise received palliative treatment. The outcomes are comparable to CF based dCRT, and should be considered as the preferred treatment option in this patient group.

PO-0797 Impact of 99mTc-GSA SPECT image-guided inverse planning on DFH parameters for SBRT planning for HCC

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Purpose or Objective
A radiopharmaceutical tracer, ^{99m}Tc-labeled diethylene triamine pentaacetate-galactosyl human serum albumin (^{99m}Tc-GSA), that binds specifically to the hepatic asialoglycoprotein receptor is used to assess hepatic function. Single-photon emission computed tomography (SPECT) using ^{99m}Tc-GSA provides three-dimensional information about regional liver function, and its findings suggest that regional function of patients with liver tumors is inhomogeneous because of previous treatments, such as radiofrequency ablation and transarterial