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Erratum

Re: Tucker SL, Liu HH, Liao Z, *et al*. Analysis of radiation pneumonitis risk using a generalized Lyman model. *Int J Radiat Oncol Biol Phys* 2008; 72:568–574.

During a recent review of our dosimetric data, we found an error in the method by which treatment plans were de-archived for calculation of the lung dose–volume histograms (DVHs) used in this retrospective analysis. We wish to emphasize that all DVHs were correct at the time of treatment delivery; the error affected only the retrospective de-archiving process. We have now correctly de-archived the plans for all but 1 patient, leaving data from 575 patients available for reanalysis.

It was further noted that, in several cases, the previously computed DVH represented a composite of the original treatment plan and the re-treatment plan for a later tumor recurrence. These cases have been revised so that the DVH represents the original treatment plan only. The time to Grade 3 radiation pneumonitis was censored at re-treatment for any patient receiving subsequent radiation or surgery to ensure that events included in the modeling reflect the effects of the initial treatment only. The crude incidence of Grade 3 radiation pneumonitis is still 20% (115 of 575, compared with 117 of 576 reported previously).

Table 1 presented here replaces Table 1 in the original article and shows the parameter estimates obtained by use of the corrected lung DVHs and revised time-to-event data. It is gratifying to note that the revised estimates of the reciprocal slope parameter, m , from the generalized Lyman model are smaller than the values reported previously, which were $m = 0.43$ for the full model and $m = 0.56$ for the fit with volume parameter $n = 1$. This implies that the fitted dose–response curves are now somewhat steeper, as expected when a source of heterogeneity in the data (in this case, the presence of dosimetric errors) is correctly taken into account. A consequence of the increased steepness is that the corrected estimates of the Lyman model parameter TD_{50} are substantially smaller than the values previously reported. Revised versions of Figs. 3 and 4 are also presented here; the corrected versions of Figs. 1 and 2 are not included because the changes were so slight as to be nearly imperceptible.

Fig 3.

Revised fit of the generalized Lyman model as a function of mean lung dose (MLD) for smokers, former smokers, and non-smokers (model parameters from column 2 of Table 1). Points show Kaplan-Meier estimates of RP incidence at 1 year in patient subgroups. The cohorts of smokers and former smokers were divided into 4 groups each according to mean lung dose: MLD < 15 Gy, 15-20 Gy, 20-25 Gy, and > 25 Gy. The cohort of nonsmoking patients was divided into two subgroups with MLD < 20 Gy and MLD > 20 Gy. Points are plotted at the average MLD value for each subgroup. Horizontal error bars indicate ± 1 standard deviation in MLD; vertical error bars indicate ± 1 standard error in the estimated RP incidence.

Fig 4. Revised estimates of freedom from grade ≥ 3 RP in patient subgroups defined by normal-tissue complication probability (NTCP) value computed from the fit of the generalized Lyman model with $n = 1$ (Table 1, column 2).

Table 1
Parameter estimates of generalized Lyman model for risk of Grade 3 radiation pneumonitis

Parameter	Model (95% CI)	
	Full model	Fix $n = 1$ (MLD model)
n	0.64 (0.35–1.29)	1 [*]
m	0.39 (0.27–0.61)	0.49 (0.38–0.67)
TD_{50} (Gy)		
Smokers	46.0 (34.2–69.6)	42.9 (32.2–85.8)
Former smokers [†]	37.7 (23.5–45.1)	30.9 (17.6–40.8)
Nonsmokers [‡]	31.3 (17.0–40.9)	24.0 (12.0–34.7)
μ	1.31 (1.23–1.40)	1.31 (1.23–1.40)
σ	0.41 (0.36–0.47)	0.41 (0.36–0.47)

Abbreviations: CI = confidence interval; MLD = mean lung dose.

^{*} Volume parameter fixed at $n = 1$; comparison with fit of the full model is $p = 0.177$ (likelihood ratio test).

[†] The dose-modifying factor compared with TD_{50} for smokers equals 0.82 and 0.72 for the full model and MLD model, respectively.

[‡] The dose-modifying factor equals 0.68 and 0.56 for the full model and MLD model, respectively.