



Figure S1. Significant correlation between LBM index assessed by DXA and skeletal muscle index assessed by CT scan of abdomen.

Table S1. The associations between age, BMI, clinicopathologic variables, treatment-related factors and nutritional/inflammatory markers in 127 LAHNSCC patients before CCRT

Included patient number	Age (years)		BMI (kg/m ²)	
	Oral cavity with adjuvant CCRT		Non-oral cavity with primary CCRT	
	69		58	
Variables, expressed as correlation coefficient or mean±standard deviation				
<i>Clinicopathologic factors</i>			<i>P</i> -value*	<i>P</i> -value*
Age (years)	---		---	0.005
Sex (male vs female)	53.2 ± 5.8 vs 58.0 ± 0.0		0.575	20.4 ± 6.6 vs 22.9 ± 3.7
TNM stage (III vs IVA vs IVB)	51.5 ± 6.4 vs 53.0 ± 9.5 vs 54.4 ± 3.9		0.790	23.2 ± 1.5 vs 23.4 ± 4.1 vs 21.0 ± 3.6
T status (T1-2 vs T3-4)	57.5 ± 7.9 vs 52.7 ± 8.5		0.131	24.1 ± 4.0 vs 22.4 ± 3.7
N status (N0-1 vs N2-3)	54.1 ± 7.7 vs 52.5 ± 9.0		0.442	22.9 ± 3.2 vs 22.7 ± 4.1
Histologic grade (1 vs 2 vs 3)	51.6 ± 6.5 vs 53.6 ± 9.1 vs 52.4 ± 6.3		0.781	20.9 ± 3.6 vs 22.8 ± 4.4 vs 23.0 ± 3.1
Smoking (no vs yes)	55.8 ± 8.4 vs 53.0 ± 8.5		0.459	22.9 ± 5.9 vs 22.7 ± 3.7
Alcohol (no vs yes)	54.6 ± 7.6 vs 52.8 ± 8.7		0.445	22.3 ± 4.6 vs 22.9 ± 3.7
Betel nut (no vs yes)	54.9 ± 8.7 vs 52.7 ± 8.4		0.380	22.1 ± 4.0 vs 23.5 ± 3.8
ECOG performance status (0 : 1 : 2)	50.0 ± 1.4 vs 53.2 ± 9.5 vs 51.0 ± 13.2		0.810	24.8 ± 2.9 vs 22.5 ± 4.0 vs 22.3 ± 3.1
HN-CCI (0 vs 1 vs 2 vs ≥3)	50.2 ± 8.1 vs 52.0 ± 7.4 vs 53.2 ± 4.4		0.675	22.9 ± 4.4 vs 22.1 ± 4.1 vs 23.1 ± 3.3
Trachesotomy (no vs yes)	55.8 ± 8.0 vs 52.0 ± 8.4		0.077	23.4 ± 6.6 vs 21.8 ± 4.8
Mean daily calorie intake during CCRT (kcal/kg/day)	0.109		0.374	-0.550
				< 0.001*

Treatment-associated factors

CCRT Regimen

RT dose (Gy)	0.104	0.396	0.176	0.187
RT fractions	0.118	0.334	0.037	0.781
RT duration (days)	0.067	0.585	0.111	0.407
Cisplatin dose (mg/m ²)	-0.011	0.926	-0.045	0.738

CCRT-induced grade 3/4 toxicity

Dermatitis (no vs yes)	53.3 ± 8.6 vs 52.6 ± 2.9	0.907	22.7 ± 3.9 vs 24.0 ± 5.4	0.609
Pharyngitis (no vs yes)	53.2 ± 8.4 vs 52.8 ± 9.7	0.907	22.9 ± 3.8 vs 22.1 ± 4.4	0.573
Infection (no vs yes)	52.3 ± 8.7 vs 52.9 ± 7.4	0.895	23.2 ± 3.7 vs 21.8 ± 4.4	0.192
Mucositis (no vs yes)	54.0 ± 9.1 vs 51.8 ± 5.8	0.190	23.0 ± 4.0 vs 22.1 ± 3.7	0.488
Emesis (no vs yes)	53.5 ± 8.7 vs 51.0 ± 5.6	0.442	22.9 ± 3.9 vs 21.5 ± 3.7	0.498
Anemia (no vs yes)	53.1 ± 8.5 vs 54.6 ± 9.5	0.711	22.7 ± 3.7 vs 23.4 ± 5.8	0.664
Neutropenia (no vs yes)	52.9 ± 8.6 vs 53.8 ± 8.3	0.662	22.8 ± 3.7 vs 22.7 ± 4.3	0.928
Thrombocytopenia (no vs yes)	53.2 ± 9.5 vs 52.5 ± 9.9	0.860	22.6 ± 3.9 vs 24.2 ± 3.7	0.300

Nutritional/inflammatory markers before**CCRT**

PG-SGA (well vs moderate vs severe)	52.4 ± 10.0 vs 54.7 ± 8.4 vs 50.7 ± 7.2	0.242	21.7 ± 2.3 vs 22.8 ± 3.8 vs 21.2 ± 4.1	0.068
BMI (kg/m ²)	0.009	0.944	--	--
BW (kg)	-0.116	0.344	0.914	< 0.001*
Hb (g/dL)	-0.199	0.102	0.239	0.070
WBC (x10 ³ cells/mm ³)	-0.125	0.308	0.081	0.544
Platelet (x10 ³ /mm ³)	-0.058	0.637	0.208	0.117

TLC (x10 ³ cells/mm ³)	-0.034	0.782	0.295	0.025
Albumin (g/dL)	-0.201	0.069	0.497	< 0.001*
CRP (mg/dL)	0.200	0.100	0.188	0.166
Resting metabolic Rate (Kcal/day)**	-0.438	< 0.001*	0.732	<0.001*

*The *P*-value was determined by Pearson correlation analysis (for age, mean daily calorie, RT dose, RT fraction, RT days, cisplatin dose, BMI, BW, Hb, WBC, platelet, TLC, albumin, CRP and resting metabolic rate), ANOVA using Bonferroni adjustments (for histologic grade, ECOG performance status, HN-CCI and PG-SGA), nonparametric statistics with Kruskal–Wallis H test (for TNM stage) for multiple comparisons, independent *t* test (for sex, T status, N status, smoking, alcohol, betel nut, tracheostomy, and all CCRT-induced grade 3/4 toxicities). *P* < 0.05 represents statistical significance.

** It was calculated by Harris–Benedict equation [1].

Abbreviations: LAHNSCC , locally advanced head and neck squamous cell carcinoma; CCRT, concurrent chemoradiotherapy; HN-CCI, head and neck-Charlson Comorbidity Index; ECOG, Eastern Cooperative Oncology Group; PG-SGA, patient generated subjective global assessment; RT, radiotherapy; BW, body weight; BMI, body mass index; Hb, hemoglobin; WBC, white blood cell; TLC, total lymphocyte count; CRP, C-reactive protein.

Reference:

1. Mifflin MD, St Jeor ST, Hill LA, Scott BJ, Daugherty SA, Koh YO (1990). A new predictive equation for resting energy expenditure in healthy individuals. *The American Journal of Clinical Nutrition*. **51** (2): 241–7.