Supplementary Table S2. Muscle mass assessment

Study, year (country)	Study design, period	n	Population	Age, median (range), years	Site of measurement and cut-off point for low muscularity	Group 1 (n)	Group 2 (n)	Main Findings (Group 1 versus 2)
Moisey et al.[18] 2013 (US)	Retro obs 2019–2010	149	Age ≥65 years, injured patients with an abdominal CT on day of admission	79 (72–85)	• CT at L3: SMI • LM: SMI <38.9cm^2/m^2 (women), <55.4cm^2/m^2 (men) • Cut-off point from previous cancer population[a]	LM (106)	Normal muscularity (43)	• Prevalence of LM: 71% • Increased SMI was significantly associated with decreased in-hospital mortality (OR=0.93, 95% CI 0.875–0.997, P=0.25) • LM group: lower ventilation-free days (P=0.004) and ICU-free days (P=0.002), higher hospital mortality (P=0.018)
Paris et al.[21] 2017 (Canada)	Pros obs	149	Patients with CT abdominal scan at L3 level for clinical reason <24 hours before or <72 hours after ICU admission	59±19 (18–96)	• CT at L3: SMA • LM: SMA <110cm^2 (women), <170cm^2 (men) • Cut-off point from previous ICU population[b] • Ultrasound: thighs (quadriceps muscle layer thickness)	Older patients aged ≥65 years (68)	Younger patients aged <65 years (81)	• SMA: 126.0±34.1 versus 157.4±45.6cm^2 (P<0.001) • LM: 68% vs 49% (P=0.025) • Quadriceps muscle layer thickness (average left and right leg): 1.2±0.5 vs 1.4±0.7cm (P=0.57)
Shibahashi et al.[16] 2017 (Japan)	Retro obs Jan 2012–Feb 2016	150	Age ≥60 years, ICU patient with primary diagnosis of sepsis, abdominal CT on day of admission	75 (68–82)	• CT at L3: SMA • LM: SMA <39.0 (women), <45.2 (men) • Cut-off point derived internally	LM (NR)	Normal muscularity (NR)	• Decreased SMA was associated with increased in-hospital mortality (Adj OR=0.94, 95% CI 0.90–0.97, P<0.001) • LM group: higher hospital mortality in logistic and (Adj OR=3.27, 95% CI 1.61–6.63, P=0.001) Cox (HR=2.55, 95% CI 1.43–4.56, P=0.001) regression analysis.

Zhi et al.[17] 2019 (China)	Case-control	136	Age ≥60 years, ICU patient diagnosed with AECOPD requiring ventilation support, chest CT within 48 hours of admission	78 (71.25–83.75)	• CT at T12: dorsal muscle group area • LM: T12DMA <22.515 (both genders) • Cut-off point derived internally	LM (NR)	Normal muscularity (NR)	• T12DMA is independently associated with hospital mortality (OR=0.901, 95% CI 0.841–0.967, P=0.004) • Normal muscularity group: higher median survival (214 days vs 32 days, P=0.011)
	Feb 2013–May 2018; follow up till 31 Oct 2019 for survival							
Lambell et al.[22] 2020 (Australia)	Pros obs	50	Age ≥18 years, had a CT scan including the L3 area ≤24 hours before or ≤72 hours after ICU admission	52±20 (21–88)	• CT at L3: SMA • LM: SMA <110cm² (women), <170cm² (men) • Cut-off point from previous ICU population[b] • Ultrasound: mid-upper arm (thickness of biceps flexor), forearm (ulna muscle thickness), abdominal (rectus abdominis muscle), thighs (quadriceps muscle layer thickness)	Younger patients aged <65 years (33)	Older patients aged ≥65 years (17)	• SMA, cm² (n=50): 189.1±30.5 vs 141.5±32.2 (P=0.001) • Mid-upper arm, cm²[c] (n=48): 119.4±25.3 vs 90.4±22.3 (P=0.001) • Forearm, cm²[c] (n=39): 120.2±20.1 vs 98.6±21.0 (P=0.004) • Bilateral thighs (average), cm²[c] (n=49): 177.4±35.2 vs 112.3±39.2 (P=0.001) • Abdomen, cm (n=39): 1.2±0.3 vs 0.7±0.3 (P=0.001)

Adj: adjusted; AECOPD: acute exacerbation of chronic obstructive pulmonary disease; CI: confidence interval; CT: computed tomography; HR: hazard ratio; ICU: intensive care unit; L3: third lumbar vertebra level; LM: low muscularity; NR: not reported; OR: odds ratio; Pros obs: prospective observational study; Retro obs: retrospective observational study; SMA: skeletal muscle area in cm²; SMI: skeletal muscle area index (SMA in cm²) divided by squared height (in m²); T12: twelfth thoracic vertebral level; T12DMA: dorsal muscle group area at the T12 vertebral level (defined as any muscle within the region posterior to the T12 spine and ribs and no more lateral than the lateral-most edges of the erector spinal muscles)

[a] Mourtzakis M, Prado CM, Lieffers JR, et al. A practical and precise approach to quantification of body composition in cancer patients using computed tomography images acquired during routine care. Appl Physiol Nutr Metab 2008;33:997-1006.
[b] Weijs PJ, Looijaard WG, Dekker IM, et al. Low skeletal muscle area is a risk factor for mortality in mechanically ventilated critically ill patients. Crit Care 2014;18:R12.
[c] Muscle thickness (cm) multiplied by limb length (cm).
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