In Reply

We thank Cintosun et al. [1] for their interest regarding our study [2]. Sarcopenia has been defined as the involuntary loss of muscle mass; this wasting phenomenon is shared by the aging process and by patients with chronic diseases. However, the mechanism through which muscle wasting is promoted differs between older people and patients with cancer [3]. The main difference may be the presence of underlying disease, which is responsible for promoting such wasting. Age-related sarcopenia is a concept that describes the loss of muscle mass and muscle strength associated with aging. However, loss of skeletal muscle mass should be considered the most clinically relevant phenotypic feature of cachexia-related sarcopenia. In addition, progressive skeletal muscle loss has negative clinical consequences on muscle strength, respiratory function, functional status, disability risk, and quality of life [4]. Because of these differences, the methods used to assess and classify sarcopenia in older people may not be very similar to those used to diagnose sarcopenia in patients with cancer. In the oncology setting, the use of computed image analysis for the assessment of body composition is considered the gold standard because it is a clinically practical and precise method for the quantification of skeletal muscle area. This is also true of dual-energy x-ray absorptiometry (DXA); however, DXA is not usually available in cancer settings. Regional analysis of fat and fat-free tissue at the third lumbar vertebra with DXA or computed tomography (CT) strongly predicted whole body fat and fat free tissue ($r = .86–.94$; $p < .001$). Furthermore, CT images distinguish among specific muscles, adipose tissues, and organs, a level of detail not provided by DXA [5].

To date, more than 150 articles have been published on CT-defined muscle cross-sectional area in relation to clinical outcomes in oncology and hepatology. All tissue annotation is done by a qualified expert in anatomical radiology; the attenuation values are secondarily used to distinguish pixels of the identified structures that lie within the attenuation values generally agreed to represent specific tissues [6]. Thus, anatomical characteristics allow the operator to delimit tissue area manually and correct as needed.

Moreover, cutoff points were proposed by Prado et al. after analyzing the association of muscle mass index (SMI) values with survival in cancer patients [7]. In our paper, we discuss the use of these cutoff points and address the fact that these cutoff points may not be ideal to estimate sarcopenia in Mexican population [2]. Although the prevalence of malnutrition in Mexican patients with non-small cell lung cancer has been similar to that reported by other studies of the same population [8], the difference in body composition could explain why our study showed a much higher prevalence of sarcopenia compared with the prevalence reported in a similar population (68.8% vs. 46.8%) [9]. Further research to explore the validity of these values and their correlation with other muscle function tests is needed to generate more population-based specific values. In recognition of this, in our study we assessed the relationship between lean body mass and body mass index as continuum variables instead of only the classification of sarcopenia according to SMI.

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Disclosures

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