MSc thesis entitled: A validation study of the cancer cachexia stages

Project 461

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Introduction:
Cachexia is a highly prevalent syndrome in cancer and other chronic diseases. The taxonomy of cancer cachexia (CC) is complex because of the heterogeneous pathophysiological and clinical features. Lately, a consensual definition and a classification system comprising four CC stages have been proposed but not yet validated. The aim of our study was to classify advanced cancer patients in the CC stages to determine the association between these stages and clinical, nutritional and functional outcomes.

Methods:
Starting from the four-stage classification system proposed for CC [noncachexia (NC), pre-cachexia (PC), cachexia (C) and refractory cachexia (RC)], we identified five classification criteria available in clinical routine practice [biochemistry (elevated C-reactive protein or leukocytes, or hypoalbuminemia, or anemia), food intake (normal/decreased), moderate (≤ 5%) or significant weight loss (> 5%/past six months) and reduced performance status], to allocate patients in the CC stages. Thereafter, we determined if clinical, nutritional and functional characteristics varied significantly across patients re-grouped in the different CC stages.

Results:
Our sample consisted of 297 advanced cancer patients, of whom 69% had metastatic disease, mainly from primary gastrointestinal and lung tumours. These patients were classified into C (36%), followed by 21% for PC and RC and 15% for NC. Significant differences were observed among the CC stages for most of the outcomes (symptoms, body composition, handgrip strength, emergency room visits and length of hospital stays) according to the severity of CC. Survival analysis showed differences among all stages except between PC and C. Discussion: The proposed set of five criteria enabled us to classify patients into distinct CC stages associated with relevant outcomes. However, the lack of difference between PC and C suggests that PC is a more heterogeneous group including patients at high risk of cachexia as well as patients in early cachexia; that PC and C patients could be similar; or that the criteria used are too imprecise.

Conclusion:
This is the first clinically based set of criteria allowing one to allocate patients with advanced cancer into meaningful and clinically distinct CC stages. This simplified classification is a tool that is applicable both in clinical and research practice. The fourstage consensual classification system will provide both a systematic approach to the diagnosis of CC as well as a way of comparing different cancer populations enrolled in clinical trials for CC.

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