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**SESSION: PATHOPHYSIOLOGY OF CACHEXIA**

**Lecture: Malnutrition / cachexia: definition, epidemiology and clinical outcome**

Claude Pichard, MD, PhD, Clinical Nutrition, Geneva University Hospital,  
Switzerland, Claude.Pichard@medecine.unige.ch

Alessandro Laviano, MD, Department of Clinical Medicine, University La Sapienza, Rome,  
Italy, alessandro.laviano@uniroma1.it

Cachexia is a complex syndrome characterizing the clinical course of acute and chronic diseases, ultimately leading to increasing morbidity and mortality, and to altered quality of life. Cachexia can be viewed as a protecting mechanism helping the patient to recover from injuries by providing large amounts of needed substrates. However, when the many metabolic alterations characterizing cachexia persist over a long period of time, the detrimental effects outweigh the benefits. Many symptoms and clinical signs concur to the definition of cachexia, and include weight loss, marked reduction of fat and lean body masses, anorexia with reduced food intake, anaemia, hypoalbuminemia, reduced physical function. Cachexia is a prevalent syndrome in daily practice and is likely to increase together with the increasing prevalence of elderly people and chronic diseases. In cancer patients, cachexia is particularly prevalent, affecting almost all patients with advanced disease. Cachexia is also found among patients with end-stage renal disease undergoing hemodialysis, liver or cardiac failure, chronic systemic infection, degenerative neuromuscular diseases as well as among those with prolonged ICU stay.

One of the most interesting aspects of cachexia is the uncertainty in its definition. Indeed, recent clinical data indicate that those mechanisms responsible for the progressive loss of lean body mass (i.e., increased skeletal muscle proteolysis and impaired anabolism) are operating even before weight loss occurs. Therefore, the diagnosis of cachexia should not be based on the presence of weight loss, but it should rely on more selective and specific markers monitoring the activation of the intracellular catabolic pathways (i.e., C-reactive proteins). Consequently, the wording of this syndrome should be better defined, and it has been proposed that the pre-clinical phase (i.e., activation of the proteolytic mechanisms with no weight loss or other clinical sign) could be termed “wasting”, while the term “cachexia” should be limited to the full clinical syndrome (weight loss, loss of lean body mass, fatigue, etc.). A consensual definition is eagerly awaited.

Prevalence of cachexia at hospital admission and during hospital stay is generally extrapolated on the basis of body mass index below 15.9 kg/m<sup>2</sup> or altered body composition measurement (fat-free mass or fat mass below the 5<sup>th</sup> percentile). A better evaluation of the prevalence of cachexia based on more specific criteria as mentioned above is needed and required prospective epidemiological studies designed for this purpose. These studies should include relevant parameters to assess the clinical outcome and precise informations with regard to the type and goal of nutritional support (oral, enteral, parenteral; curative vs. palliative). Indeed, alleviating cachexia in patients with chronic diseases (end-stage cancer, etc) is likely to be associated with improved quality of life and probably prolonged survival. On the other hand, preventing/counteracting cachexia in patients with acute illnesses is likely to improve morbidity and cost-efficiency of treatment.